NOVEMBER, 1960

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# AMATEUR RADIO

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## EDITORIAL

★

## ORGANISATION

A RECENT thought-provoking editorial by Austin Forsyth, G6FO, is outstanding for its clear headed approach to a problem which is giving much concern to those concerned with the future of Amateur Radio activity.

Trends at the I.T.U. Conference at Geneva and ideological clashes at U.N.O. emphasise the realistic nature of G6FO's proposal.

We therefore feel that the relevant parts of his editorial merit reproduction hereunder.

"Amateur Radio activity is on a world-wide scale and at the present time there can hardly be less than 200,000 A.T. stations on the air—with perhaps another 100,000 or so in various stages of suspended animation, retaining their interest and keeping in touch through the literature, itself an important sector of the field of radio publishing.

"In spite of the pressure of this activity and the global nature of our branch of the art of radio communication, the organisation of Amateur Radio, looked at internationally, is loose and indecisive, and therefore weak and ineffective . . ." (A situation which will remain as long as Russia and the iron curtain countries generally stand aloof.)

"The need is, therefore, for a truly representative international body, with new aims and objectives, which will include as many as possible of the nations of the world irrespective of their political (or ideological) affiliations."

The W.I.A., realising that the time had come for a more virile organisation to represent and lead the Radio Amateurs of the world, also appreciated the fact that heavy demands would be made on the financial resources of such an organisation, if it was to be really effective.

Our representative to I.T.U., the late John Moyle, was therefore instructed to take the opportunity afforded by informal meeting of representatives of member societies of the I.A.R.U. present in Geneva, to propound the idea of an expanded I.A.R.U. organisation financed by all member societies.

We are therefore well able to appreciate the advantages of the solution proposed by G6FO—

"A solution might be found to lie in making Amateur Radio, in the international context, one of the branch activities of U.N.E.S.C.O.—the United Nations Educational, Scientific and Cultural Organisation. The advantages are manifold, and obvious. Operating under the charter of the United Nations, with its headquarters in Paris, U.N.E.S.C.O. is represented directly or indriectly in all the world's capitals, and is an international body of considerable authority. It disposes of funds totalling nearly £10m. annually, and one of its objects under its own charter is to promote collaboration among the nations by education, science and culture—and who could say that Amateur Radio is not at once educational, scientific and cultural, as well as being, by its very nature, almost forced to the ideal of international collaboration.

"To be clearly identified with U.N.E.S.C.O. would strengthen immeasurably the whole fabric of Amateur Radio, without in any way affecting the rights of individuals or the freedom of action of national groups within their own parishes.

"The only question is—Would U.N.E.S.C.O. be prepared to accept the commitment?"

—FEDERAL EXECUTIVE.

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# Audio Limiters, Clippers, and the use of Silicon Diodes as Compressors

L. H. VALE,* VK5NO

IN order to fully modulate transmitters with speech it has been found advisable to use limiters. Because of the nature of speech it is possible to clip off the highest peaks without affecting intelligibility and this allows the average speech power to be increased rather considerably. If the limiting circuit is set so that it is not possible to overmodulate the carrier, i..e the limiter functions at, say, 90% modulation, we can also be sure that no overmodulation exists, and it will not be necessary to continually monitor the modulation percentage.

The disadvantages of using a limiter are as follows:—

(a) Speech quality suffers—it becomes "unnatural" but not unintelligible, due to the restriction on dynamic range.

(b) Because of the increased gain being used at low levels any audible background noise is much more apparent during speech pauses. This background noise drops down to its normal relation to the voice signals when limiting, but this constant fluctuation of the background also adds to the unnaturalness of the transmission.

(c) Rather severe limitations are placed on the frequency response of the modulation system; this will be discussed further below.

Limiting can be done anywhere in the system between microphone and modulated stage—in fact the modulated stage itself automatically clips the negative peaks at full modulation but so sharply and drastically that the harmonics generated produce sidebands that spread over a wide frequency range. This, of course, is the "splatter" that we must avoid at all costs.

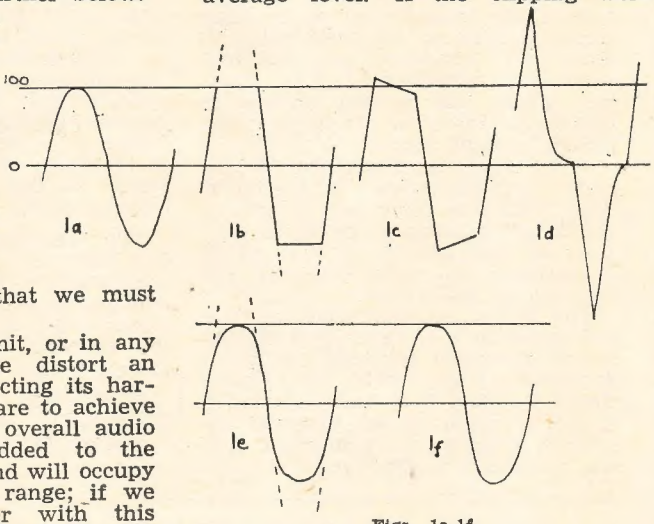
It is not possible to limit, or in any other way amplitudewise distort an audio signal without affecting its harmonic content, and if we are to achieve a worthwhile increase in overall audio level, the harmonics added to the speech will be powerful and will occupy a very wide frequency range; if we modulate the transmitter with this limited (or distorted) signal directly then we should produce rather more splatter than if we merely overmodulated the Class C stage; it, at least, only limits the negative peaks.

It is necessary then, to filter out the harmonics generated by the limiter before the audio signal is used to modulate the carrier. This is normally done by using a filter that attenuates all frequencies above three thousand cycles, and if this filter is placed between the modulator and Class C stage it will also attenuate the harmonics produced in the modulator itself. Clipping or compressing always wastes some of the audio power so this is a major argument in favour of limiting early in the audio system where the powers are so much less. This is known as low level limiting.

However, there are another two factors which tend to make it desirable to limit the peaks as late as possible in the audio system.

Firstly, of course, if we limit the audio early in the modulation system, any change of audio gain after the limiter will corresponding change the modulation percentage. As the gain of an audio system changes with variations in supply voltages, then some method of stabilising the gain after the limiter is desirable. The easiest method is to employ negative feedback around as much of the amplifier as possible; this need only include the stages prior to the modulator itself, because voltage supplies to the modulator and Class C stage will vary together anyway. If the modulator is Class B or AB2, then heavy negative feedback on the submodulator is desirable in any case, to reduce the source impedance looking into the modulator grids.

Secondly, Fig. 1(a) shows a sine wave and Fig. 1(b) shows the same signal clipped to allow a 6 db. increase in average level. If the clipping were done between the modulation transformer and the Class C stage and there were no other components between the limiter and Class C stage, then Fig. 1(b) would represent the wave form of the modulation. However, if there are any circuits between the clipper and the audio output which tend to reduce the low frequency response—such as coupling condensers, transformers, etc.—then the wave form of the amplifier output tends to become as in Fig. 1(c) and in extreme cases as shown in Fig. 1(d). Lines have been drawn to show the comparison between amplitudes of the unlimited and limited signal and it will be seen that if the effect shown in this diagram takes place (as it must do to some extent, unless we use clipping after the modulation transformer and/or choke, or unless we are using an audio system direct coupled throughout), then limiting will not necessarily keep the modulation percentage constant at all frequencies.




Figs. 1a-1f.

The slope at the top of the cycle in Fig. 1(c) is inversely proportional to the ratio of the low frequency cut-off frequency after the limiter to the frequency of the signal being limited. It is a function also of the amount of limiting—the less drastic the limiting, the smaller the width of the flat top, and therefore the smaller the amount of slope. It will also be seen that if the limiting is less sudden than in Fig. 1(b), making a corresponding waveform for 6 db. clipping something like Fig. 1(e), the modulator that produced the output 1(c) will now give an output more like 1(f). The harmonic reducing filter will also tend to round off the corners of the waveform a little, and further reduce the peaks, but as this effect is more troublesome at lower audio frequencies and the filter is effective only at higher frequencies, its effect will not be very great.

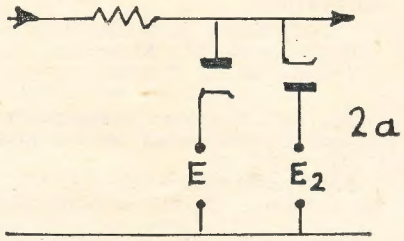



Fig. 2a.

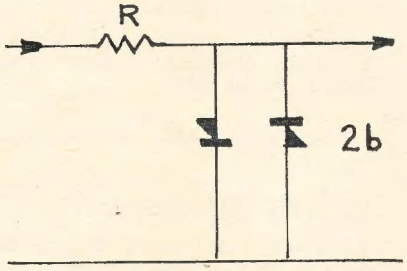



Fig. 2b.

If we clip so as to allow 95% modulation rather than 100% on higher audio frequencies, then the cut-off frequency of the modulator system after the limiter must not be greater than three-tenths of the signal frequency for 6 db. clipping, or one-quarter of the signal frequency for clipping approaching 100%. These figures apply only in the impractical case of perfect flat top clipping and no subsequent low pass

* 573 Main North Rd., Elizabeth North, S.A.

filter; but they do show that the low frequency cut-off after the limiter determines the allowable low frequency response previous to it.

Unfortunately most transmitters use high level modulation with modulation transformers, and as the size and cost of these transformers is proportional to their low frequency response, this tends to limit the cut-off frequency after the limiter to around about 200 to 300 cycles in normal cases. Using our previous figures, this indicates that our input audio must cut at, say, 1,000 cycles, which would result in very thin modulation, therefore it becomes apparent that compression resulting in the waveform shown in Fig. 1(e) is more useful than clipping, because it tends to remove this severe limitation on input amplifier low frequency response.

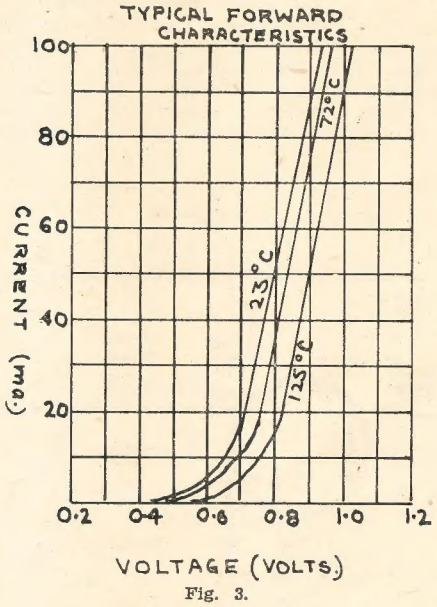


Fig. 3.

In any case, however, it should be taken as a first principal of design that low frequency reduction should be done prior to the limiter and high frequency reduction afterwards.

A compressor generates fewer harmonics than a flat top limiter and thus needs only a simple high-cut filter to avoid splatter.

The foregoing can be summarised as follows:—

1. **High level limiting versus low level limiting:**
   - (a) High level limiting avoids the problem of "droop" due to subsequent inadequate low frequency response.
   - (b) Because of the size of components in both limiter and harmonic filter, it is more expensive and less flexible than low level clipping.
   - (c) Means must be used to stabilise the audio gain between limiter and modulator if low level limiting is used.
2. **Clipping (flat top) versus compression:**
   - (a) Clipping is, in itself, more efficient in that more audio output power for a given input is generated; but this is of doubtful practical value.
   - (b) Compression reduces the effect of "droop" and therefore allows a greater low frequency response before the compressor.
   - (c) Compression generates less higher frequency harmonics than limiting, allowing simpler harmonic filters.
   - (d) It will be shown that compression is simpler to achieve.

From the above, it will be seen that, in the writer's opinion, the best approach to limiting, for Amateur use, is low level compression, because it offers both efficiency and simplicity.

In Fig. 4, the harmonic filter consists of the choke L, which is low tension supply filter choke, and the two 0.01 μF. condensers. One is mounted with the choke, and the other is the sum of the r.f. by-pass condensers in the modulated stage.

Since installing the compressor, there have been no complaints of splatter, even though we live in a Hamwise thickly populated area (although to be fair, both VK5NQ and myself consider ourselves c.w. types and the telephony is not often used). Listening from some distance away the signal sounds clean, but very thin, and probably we've taken the low frequency cutting in the pre-amplifier further than we need to have done.

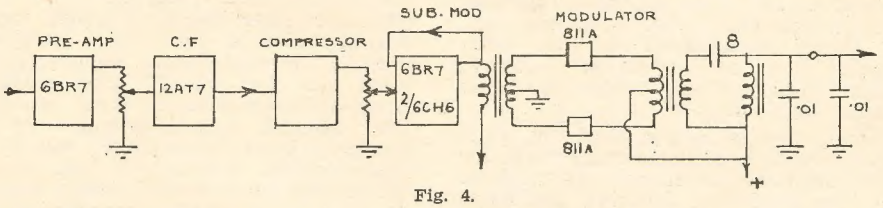


Fig. 4.

The main difference between a clipper and a compressor is shown in Fig. 2. Fig. 2(a) shows a simple clipper circuit. Equal voltages E and E2 prevent the diodes conducting until the audio peaks reach the same value, when the diodes conduct and effectively short the signal out, resulting in an output waveform similar to Fig. 1(b).

Fig. 2(b) shows a compressor circuit. At first glance it would seem that the back-to-back rectifiers would short the audio out completely, one rectifier shorting the positive peaks, the other the negative peaks; but a characteristic of most semi-conductor diodes is that they still have quite a high resistance in the forward direction until there is considerable voltage drop across them. A curve of this characteristic in a silicon diode, a Ferranti ZS type, is shown in Fig. 3. The curve is typical of all silicon diodes. The value of R determines the voltage at which compression occurs, the lower the resistance, the higher the output voltage peaks. A value of 3K is used here and the output voltage is about one volt, peak to peak.

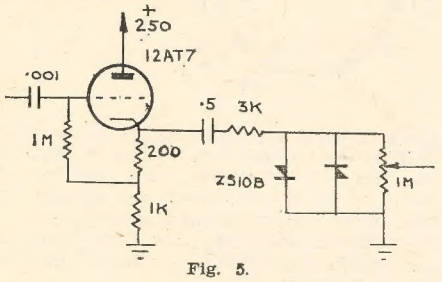


Fig. 5.

A modulation system which has been used at VK5NO for more than a year is shown in block form in Fig. 4, and the limiter circuit is shown in detail in Fig. 5.

Referring to Fig. 4, the method of setting the system up for full modulation is as follows: Looking at the modulation in an oscilloscope, and with VR2 turned on so that the audio wave form can be seen, turn VR1 up until compression becomes apparent, i.e. until an increase in input voltage does not cause a further increase in modulation. After that, adjust VR2 until modulation is just under 100%.

The rules are the same as in previous years, but the attention of overseas contestants is drawn to the additional bonus for working each additional ten G3 stations irrespective of band. The G3 series comprises the largest single group of U.K. stations.

The Contest will start at 0700 G.M.T. on Saturday, December 3, and end at 1900 G.M.T. on Sunday, December 4, 1960.

An exchange of RS reports followed by a three-figure serial number starting with 001 for the first contact and increasing by one for each successive contact (for example, 58001, 56002, etc.) must be made.

Scoring for overseas stations: Each completed contact with a British Isles station will score 5 points. In addition, a bonus of 50 points may be claimed for the first contact with each British Isles country-numeral prefix. A further 50 bonus points will be scored for each additional ten G3 stations worked irrespective of band.

In conjunction with this Contest, a Receiving Contest is being held, and is open to short wave listeners throughout the world.

Overseas entrants may only log British Isles stations in contact with overseas stations for points. Each complete log entry relating to a British Isles station heard will score 5 points. In addition, a bonus of 20 points may be claimed for the first station heard in each British Isles country-numeral prefix, i.e. G2, G3, GM4, etc., and further bonus of 50 points will be scored for each additional ten G3 stations logged irrespective of band.

We have had several reports that the compression is obvious, and that the background is high, giving the unnatural effect referred to earlier in the article.

However, I consider that compression is the most effective and cleanest way of getting as much modulation as possible on to a carrier. ●

## R.S.G.B. 21/28 Mc. TELEPHONY CONTEST

# Slow-Scanning T.V. with Electrostatic C.R. Tubes

M. L. OLIVA,* VK3ZKC/T

IN Amateur Television equipment, expensive and comparatively hard-to-obtain camera tubes often give way to more modest picture systems. In view of this fact, a flying spot scanner, together with a photo-multiplier cell, is employed to scan transparencies and perhaps still-life scenes. These scanners present certain problems with normal (i.e. C.C.I.R. standard) scanning speeds, but with reduced speeds, such as those encountered in slow-scan experiments, the situation becomes much more difficult when magnetic systems are used.

Flying-spot scanners used by Amateurs usually make use of P7 phosphor tubes since the initial light output from the blue phosphor, ignoring the long-persistence yellow afterglow, is a good spectral match for a photomultiplier such as the 931A which, incidentally, is insensitive to the yellow afterglow phosphor. The electro-magnetically deflected cathode ray tubes themselves were manufactured in large quantities for radar use during the war, and for high-speed scanning purposes normal 70 degree commercial deflection components are satisfactory.

With slow-scanning methods, however, these magnetically-deflected systems are no longer suitable because the standard yokes, transformers, coils and perhaps line and frame output tubes were designed for 50 c.p.s. vertical and 15,625 c.p.s. horizontal deflection rates only, against something like five **seconds** per cycle vertical and 3,000 to 8,000 c.p.s. horizontal deflection frequencies for slow-scanning.

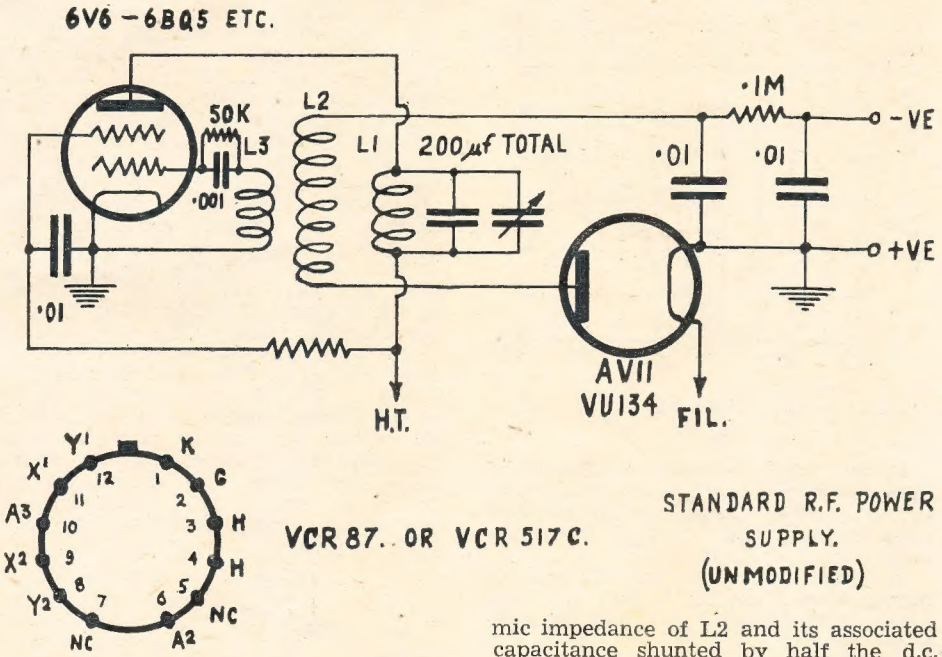
The transformers, unless specially wound for the purpose, can be replaced by cathode follower stages feeding into the yoke directly, but in any case a considerable amount of power will still be lost in driving the inefficient yoke. In addition, a separate e.h.t. system must be used.

Instead of battling with magnetic c.r.t's., it is far easier and more economical to use electrostatically deflected tubes. These have no scanning speed restrictions as far as slow-scan work is concerned, and the deflection amplifiers themselves are no more complex than for normal electrostatic c.r.t's. The effective electron beam flyback time can also be made much shorter than for electromagnetic systems for a given sweep frequency. Depending on the sweep circuits used, the flyback time and rise time ratio of the sawtooth voltage may be 1 : 50 or less.

More important, however, are the tube phosphors themselves. Cathode ray tubes such as the 5BP1, 5BP4, 5LP1, 5CP1, VCR97, VCR139A, VCR138A, etc., are almost useless for flying-spot scanning because of the relatively long P1 or P4 phosphor persistence (about 300 microsec. up to 30 milli-sec., depending on tube used), the effect of long phosphor persistence being a partially integrated electrical output from the photo-multiplier.

* 20 Sturdee Road, Black Rock, S.9, Vic.

Apart from tubes like the 5BP5, 5BP11, 5JP5 and 12FP7, the only suitable (and also inexpensive) tube which appears to be in reasonable supply is the English VCR87. This radar c.r.t. is considered as hopeless even for experimental television receivers, but its two-step screen can, as with P7 tubes, be used to advantage at the slow-scan transmitter and receiver. The first phosphor layer (electron layer) has a short-persistence deep blue emission, probably in the 3,800 a.u. region, against 4,300 a.u. for the P7 zinc sulphide silver-activated electron layer emission. The normal long-persistence yellow phosphor layer (glass layer) useful for radar is also present, so that on the whole this tube is not unlike normal P7 radar tubes. At the transmitter the blue phosphor is suitable for scanning purposes, provided that the photomultiplier used is sensitive to the blue light. The yellow phosphor, which is ignored at the transmitting end, serves its purpose at the receiver by setting up an image which persists during vertical slow-speed scanning, this time ignoring the initial blue phosphor "flash" nearest to the electron gun.




One disadvantage of the VCR87 is that it needs between 3,500 and 4,000 volts for a high intensity raster, and naturally enough, the higher the blue light output, the greater the photomultiplier output. If the e.h.t. is too hard to obtain satisfactorily, the gain of the video amplifiers could, of course, be increased, with perhaps an addition reduction in raster size. It should also be kept in mind, however, that the higher the final anode voltage, the higher the deflection voltages for a given raster size.

At least one local (i.e. VK3) manufacturer has a coil intended for a small 3 k.v. r.f. power supply using a power tube such as the 6V6 or 6BQ5.

Keep in mind, however, that the greater the final anode voltage of the c.r.t., the higher the voltage rating of the deflection plate coupling capacitors, and when considering that the value of these capacitors must increase with a decrease in scanning speed for a sufficiently low capacitive reactance at the lowest scanning frequency, it is obvious that a compromise must be made somewhere if size and cost are the deciding factors.

Although this coil is intended for 3 k.v. use, it is possible to obtain up to 4 k.v. with certain modifications. The circuit of a typical r.f. supply is shown here. With this arrangement, the voltage output is a function of the oscillator voltage developed across ZL1, and the ratio ZL2/ZL1, where ZL2 is the dynamic impedance of L2 and its associated capacitance shunted by half the d.c. load resistance, and ZL1 is the dynamic impedance of L1 shunted by the reflected plate load. Since it is assumed that no electrical changes can be made to the coil, it is therefore necessary to increase the voltage developed across ZL1, by using a tube (or tubes) having a higher rating than the original 6V6 or similar 4 watt tube, and to operate them with a higher plate voltage. Taking into account the maximum permissible plate current flow through the coil for cool operation, the maximum plate current has been set at 70 mA. A large number of power tubes having a nominal plate impedance of 3K to 12K ohms (audio) should be suitable, and at this QTH a 6N7 with the plates of both triode sections in parallel is used. The coil must be laquered or doped especially between the pies, to avoid corona discharges or sparking between the leads and windings. The whole r.f. supply unit should be effectively shield-

(Continued on Page 9)

# Try Remote Tuning for Your 50 Mc. V.F.O.*

B. CLEWORTH,† VK5ZBZ

THE stability of any v.f.o. will only be as good as the frequency determining coil of the oscillator and one or two external factors influencing its behaviour. Moreover, any stability faults which are present in a v.f.o. will be very exaggerated when the frequency is multiplied many times to drive a 50 Mc. final, although the v.f.o. might give acceptable results on some of the lower frequency bands.

Consequently, if the frequency determining components are "housed" in a semi-remote metal box, so that heat variations can be minimised, then one of these "external factors" has been eliminated.

Incidentally, if there is any doubt as to the effect of heat variation, then I suggest the reader beat a v.f.o. against a suitable crystal carrier in his receiver and whilst gently breathing "hot air" onto the oscillator coil, observe the large and rapid change in beat note.

The dimensions of the remote control box should be such that the proximity of the metal will not damp the Q of the coil. The minimum clearances are half the diameter of the coil either side of the coil and diameter spaced at the ends of the coil. The ideal box would probably be one made from cast aluminium with $\frac{1}{8}$" wall thickness, if such facilities are available. Alternatively, if sheet metal (aluminium, copper or brass) is used, the gauge should be heavy so as to provide a completely rigid container.

In the v.f.o. described, the coil is air wound with 43 turns of approximately 20 gauge spaced one wire diameter. Four pieces of $\frac{1}{4}$" polystyrene rod are cut to the length of the coil and glued to the coil or grooved to accept the turns of the coil to act as bracing supports for the turns. The diameter of the coil is $1\frac{3}{4}$". A large ceramic former would be an acceptable substitute. Then two pillars made from $\frac{1}{2}$" polystyrene are used to support the coil as shown.

The trimmer capacitor C1 and the tuning capacitor C2 should be good quality ceramic insulated double bearing types, C2 being a three-plate double spaced miniature. Silver mica capacitors are also used where indicated.

It is also important to mount the coil rigidly on the surface only of the box and connect to it via flexible leads to reduce the possibility of extraneous vibration reaching it.

Before leaving the remote control box, it is stressed that the dial drive must be mechanically efficient and have an appreciable reduction ratio, although the writer initially used a cord drive with good success.

The circuit of the v.f.o. follows standard practice except for possibly one or two points.

Two voltage regulator tubes were used because there were several on hand. One regulates screen voltage to the oscillator and the other regulates plate volts. However, the screen is the important electrode and a VR tube is essential here, otherwise variations in h.t. voltage would most certainly result in frequency drift.

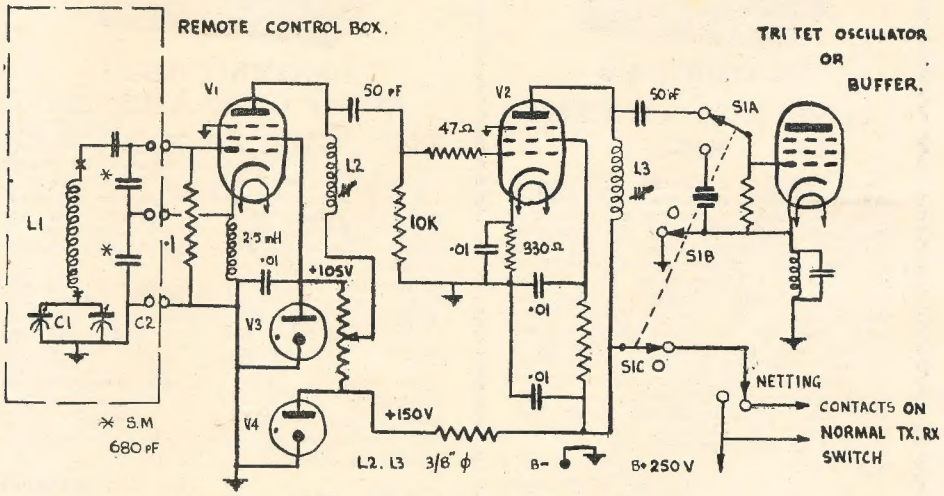
The oscillator is a Clapp followed by a single buffer stage from which output is transferred via a coupling condenser to the exciter stages of the transmitter. Alternatively, a low impedance winding and co-ax can be used. It will be noticed that the plate coils of the tubes are resonated with the output capacity of the tubes to obtain broadly resonant circuits. Both these coils are resonant at about 8.35 Mc. and the oscillator coil in the remote tuning box at half this frequency.

The tubes specified have proved satisfactory. Originally two 6AC7s were used, but the 6AG7 buffer gives slightly better output. A ceramic socket for the oscillator tube is desirable.

In using the v.f.o. on the air it has been found necessary to provide switching circuits to cut the h.t. to the v.f.o. when operating from crystal, otherwise spurious "spots" often appear on either side of the fundamental, caused by the v.f.o. energy being capacitively coupled by stray means to the first tube in the transmitter. The v.f.o. and switching circuits are shown herewith.

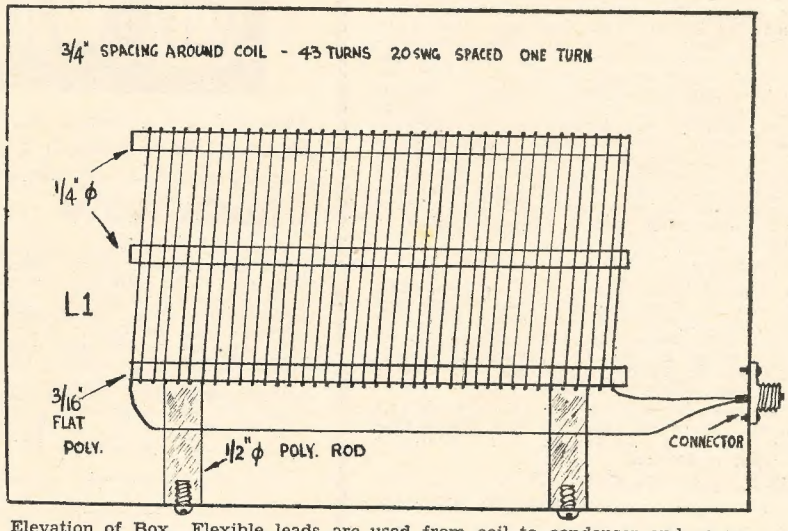
Only one switch need be operated to change from v.f.o. to crystal and vice-versa, although once v.f.o. operation is "mastered" and the advantages realised, the switch will always be in the "v.f.o." position.

The cost of the v.f.o. is less than the price of a crystal, assuming the use of some "junk box" parts. This circuit in its "**basic**" form is used by at least two six-metre stations, although the one in use at VK5ZCR has no remote control and varies in detail, but by proper attention to the frequency determining coil a very high standard of stability is obtained. The note is also very good. ●




50 Mc. V.F.O. and switching circuits.

*—Silvered mica condensers.
L1—See text.
V1—6AC7. V2—6AG7. V3—VR105. V4—VR150.
S1—Three-pole two-position wafer in the v.f.o. position.




Elevation of Box. Flexible leads are used from coil to condenser and co-ax sockets. Twin co-ax or two lengths of single co-ax connects to remote box.

* Extracted from South Australian Division W.I.A. Journal.

† Flat 5, Tranmere House, Kingsgrove, Tranmere, S.A.

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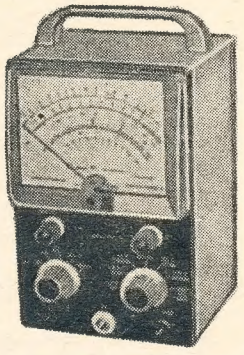

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Wgt. 7 lb. Size: 7⅜ x 4¾ x 4⅛ in.

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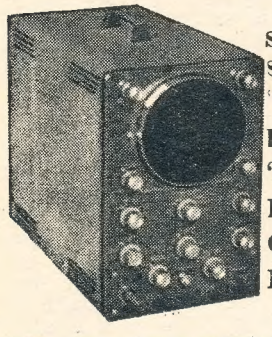

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SPECIFICATIONS

**Vertical Channel:** Sensitivity: 0.025 volts (r.m.s.) per inch at 1 kc. Freq. response: Flat within plus or minus 1 db. from 8 c.p.s. to 2.5 Mc. Flat plus 1.5 to minus 5 db. from 3 c.p.s. to 5 Mc. Response at 3.58 Mc., minus 2.2 db. (All response measurements referred to 1 kc.) Rise time: 0.08 microseconds or less. Overshoot: 10% or less.

**Horizontal Channel:** Sensitivity: 0.3 volts (r.m.s.) per inch at 1 kc. Freq. response: Flat within plus or minus 1 db. 1 c.p.s. to 200 kc. Flat within plus 3 db. 1 c.p.s. to 400 kc.

Weight 22 lb. Size: 14⅛ x 8⅝ x 16 in.

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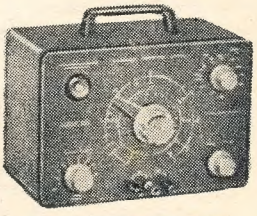

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Check unknown condenser and resistor values quickly and accurately as well as their operating characteristics with this fine instrument. Capacity measurements are made in four ranges—0.0001 mfd. to 1,000 mfd. Measures resistance from 100 ohms to 5 megohms in two ranges. All values read directly on the calibrated scale. An electron beam "eye" tube indicates balance and leakage. Leakage test provides switch selection of five test voltages, 25 volts to 450 volts d.c. Spring return test switch eliminates shock hazard to operator by automatically discharging condenser after test. For safety of operation the circuit is entirely transformer operated.

Wgt. 7 lb.

PRICE: £16/16/0

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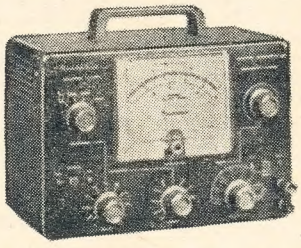

## HEATHKIT AG-9A AUDIO GENERATOR KIT

No well equipped audio lab. or service shop should be without this versatile instrument. The AG-9A produces near-perfect sine waves for a multitude of audio testing applications. Use it as a signal source for bridge measurements, harmonic distortion measurements, external modulation of r.f. signal generators, or testing audio amplifiers for gain and frequency response.

**Specifications:** Frequency, 10 c.p.c. to 100 kc., switch selected, two significant figures and multiplier. Output: 6 ranges 0 to 0.003, 0.03, 0.1, 0.3, 1 volt r.m.s. into external 600 ohm load or with internal load into Hi-Z. Two ranges 0 to 3, 10 volts r.m.s. into a minimum of 10,000 ohms, minus 60 db. to plus or minus 22 db. in eight steps, minus 60 db. to plus or minus 2 dbm. (0 dbm1 equals mw. to 600 ohms).

Distortion: Less than 0.1% 20 to 20,000 c.p.s.

Wgt. 10 lb. Size: 9½ x 6½ x 5 in.

PRICE: £46/9/0

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# The Ross Hull Memorial V.H.F. Contest, 1960-61

THE Federal Contest Committee of the Wireless Institute of Australia invites all Australian and Overseas Amateurs and Short Wave Listeners to participate in this annual contest which is held to perpetuate the memory of the late Ross Hull whose interest in v.h.f. did much to advance the art.

A handsome Perpetual Trophy is awarded annually for competition between members of the W.I.A. in Australia and its Territories, inscribed with the name and life work of the man whom it honours. The name of the winning member of the W.I.A. each year is also inscribed on the trophy. In addition, this member will receive a suitably inscribed, framed photograph of the trophy.

**Objects**: Amateurs in each Call Area (this includes those in Australian Mandated Territories and Antarctica) will endeavour to contact Amateurs in Australian call areas and overseas. (VK1 and VK2 will be considered to be one call area.)

**Date of Contest**: 17th December, 1960, to 15th January, 1961.

**Duration**: From 0001 hours E.A.S.T. 17th December, 1960, to 2359 hours E.A.S.T., 15th January, 1961.

## RULES

1. There shall be four main sections to the Contest:
   (a) Transmitting, c.w., 50-54 Mc. and 56-60 Mc. bands.
   (b) Transmitting, phone, 50-54 Mc. and 56-60 Mc. bands.
   (c) Transmitting, phone, 144 Mc. band and higher bands.
   (d) Receiving, open, all bands from 50 Mc. and higher.

2. All Australian and Overseas Amateurs may enter for the Contest whether their stations are fixed, portable or mobile.

3. All Amateur v.h.f. bands may be used, but no cross-band operating is permitted, with the exception that the 50-54 Mc. and 56-60 Mc. bands will be considered to be the same band for contacts.

4. Amateurs may enter for any or all of the transmitting sections (a), (b), and (c) listed in Rule 1. Separate logs must be submitted for each section (a), (b), and (c), but **all** contacts must be consecutively numbered in the **one** number sequence to facilitate checking.

5. Only one contact per band per section is allowed each calendar day.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a contestant and must submit a separate log under his own call sign.

7. Entrants must operate within the terms of their licences.

8. **Cyphers**: Before points may be claimed for a contact serial numbers must be exchanged and acknowledged. The serial number of 5 or 6 figures will be made up of the RS (telephony) or RST (c.w.) report plus three figures which may begin with any number between 001 and 100 for the first contact and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then for the second contact the number will be 054, for the third 055 and so on. If any contestant reaches 999 he will start again with 001.

9. **Entries** must be set out as shown in the example, using only one side of the paper. Entries must be post marked not later than **one** month after the close of the Contest (i.e. not later than Wednesday, 15th February, 1961) and addressed to the **Federal Contest Committee, W.I.A., Box 851J, G.P.O., Hobart, Tasmania.**

10. **Scoring** for Sections (a) and (b) will be based on Scoring Table A-B for 50 Mc., and for Section (c) will be based on Scoring Table C for 144 Mc. and higher.

11. **Logs**: All logs shall be set out as in the example shown and in addition will carry a front sheet showing the following information:

Name.....Call Sign.....
Address.....Section.....
.....
Claimed Score: Section (a).....
(b).....
(c).....
(d).....
**Total Score**.....

**Declaration**: I hereby certify that I have operated in accordance with the Rules and Spirit of the Contest.
Signed.....
Date.....

**Note**: Entries on the front sheet must be clearly shown in block letters.

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed the regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee of the W.I.A. will be final. No dispute will be entered into.

14. **Awards**: Certificates will be awarded to the winners of each section in each VK and Overseas Call Area. A Certificate will also be awarded to the contestant returning the highest aggregate score in the three transmitting sections. The VK contestant who returns the highest aggregate score in the transmitting sections and who is a financial member of the W.I.A. will hold the Trophy until the next Ross Hull Contest is decided, and in addition will receive an appropriately inscribed photograph of the Trophy.

## GENERAL

Comments and suggestions from contestants regarding the Rules will be welcomed and should be added to the front sheet.

(Continued on Page 15)

### SCORING TABLE C
**(For 144 Mc. and Higher Bands)**

| Band | Intrastate Contacts | Interstate Contacts |
|---|---|---|
| 144 Mc. .... .... | 1 point | 2 points |
| 288 Mc. .... .... | 2 „ | 4 „ |
| 576 Mc. .... .... | 4 „ | 8 „ |
| Each higher freq. band | 10 „ | 20 „ |

### SCORING TABLE A-B (for 50-54 and 56-60 Mc. bands)

| From \ To | VK1-VK2 | VK3 | VK4 | VK5 | VK6 | VK7 | VK8 | VK9 | ZL | Other Stations |
|---|---|---|---|---|---|---|---|---|---|---|
| VK1-VK2 .... | – | 5 | 4 | 2 | 10 | 4 | 6 | 10 | 7 | 10 |
| VK3 .. .... .... | 5 | – | 4 | 4 | 9 | 10 | 6 | 10 | 7 | 10 |
| VK4 .. .... .... | 4 | 4 | – | 5 | 10 | 7 | 3 | 7 | 8 | 10 |
| VK5 .. .... .... | 2 | 4 | 5 | – | 7 | 5 | 3 | 10 | 8 | 10 |
| VK6 .. .... .... | 10 | 9 | 10 | 7 | – | 10 | 10 | 10 | 10 | 10 |
| VK7 .. .... .... | 4 | 10 | 7 | 5 | 10 | – | 7 | 10 | 7 | 10 |
| VK8 .. .... .... | 6 | 6 | 3 | 3 | 10 | 7 | – | 3 | 10 | 10 |
| VK9 .. .... .... | 10 | 10 | 7 | 10 | 10 | 10 | 3 | – | 10 | 10 |
| ZL .... .... .... | 7 | 7 | 8 | 8 | 10 | 7 | 10 | 10 | – | – |
| Other Stations | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | – | – |

The score for the first contact with any particular call area on c.w. and for the first contact on phone will be that shown in the Table above. For each subsequent contact with the same call area the score will reduce by one point until the contact value reaches 1, when all further contacts will retain that value.

In addition a bonus of 20 points may be claimed for each new call area worked on c.w. and on each phone band.

### EXAMPLE OF TRANSMITTING LOG

| Date/ Time E.A.S.T. | Band | Emission | Call Sign | RST/NR. Sent | RST/NR. Rcvd. | Call Area Bonus | Points Claim. | Blank |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

NOTE.—The standard W.I.A. Log Sheet follows the above form.

### EXAMPLE OF RECEIVING LOG

| Date/ Time E.A.S.T. | Band | | Call Sign Heard | RST/NR. Sent | Station Called | Call Area Bonus | Points Claim. | Blank |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

NOTE.—The standard W.I.A. Log Sheet follows the above form.

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# FEEDBACK

Hear about the ardent DXer who thought 230VAC was a new country?

★

It is human nature to complain about things not being done, but when a responsible body says this will be done, then does nothing, it leaves itself open to adverse comment. Earlier this year every Amateur was promised a full report of the I.T.U. Conference, but this has never been issued. To my mind this report will now serve no useful purpose because the Ad Hoc Committee on Frequency Review is meeting and they will, or should I say are unlikely to be influenced by this report. It would be better to conserve this money for establishing a fund or create a memorial tribute to the late John Moyle. Publishing a report upon the past I.T.U. Conference is only providing history, not progress. You contributed to this Fund so it is your money, thus you should have a say in how the funds are now to be used. Do you want a copy of this report? If so, advise your Federal Councillor so that a majority rule can say if it is to be published. It is incorrect to say because this was agreed in the past, it must be done. Surely it is commonsense to revise ideas in the light of passing events. The action is in your hands, so discuss this matter at your general meeting and ensure your money is correctly used.

★

That funny man is again on the air. When asked what is 6N7, he replied thirteen. Well you asked for it.

★

What happens to the promised articles in "A.R."? Reading through past issues note that we were promised some details of an early v.h.f. meeting held in N.S.W. What's the matter, waiting for history to occur, or has the matter been forgotten? In addition, note that some aritcles suggest that they will be followed by further details, but these do not always appear. Why?

★

Congratulations to the Pub. Com. upon the October issue, very good.

★

Emphatically deny that a Yagi is a Hindu Holy Man.

★

Was told that the t.v. man was not amused when an Amateur type told him the sync. was in the kitchen.

★

Have been seeking opinions whether H.F. makes pages pink.

★

Bet that shop is sorry they were so abrupt to the customer who asked for a crystal set. The layman still does know they are called transistors and that shop lost a nice sale of good gear.

★

Hope that they act upon Correspondence and abolish c.w. tests, nothing like complete freedom. C.w. is still the most used Amateur means of communication and has yet to be bettered for reliable working with simple gear.

73,
CASEY.

## SLOW-SCANNING T.V. WITH ELECTROSTATIC C.R. TUBES

(Continued from Page 4)

ed because the 8 or so watts of 1 Mc. stray r.f. energy may creep over the back-fence. As an alternative to r.f. supplies, voltage doubling arrangements if you have the components, are equally suitable.

Another electrostatic tube, the American 3FP7, seems to be available only in VK2. This three-inch P7 phosphor tube is of the post-deflection acceleration type, and has the disadvantage of requiring 4,000 volts for post-acceleration. Under normal circumstances, it appears that the tube operates quite well even without this 4 k.v. potential, the post-acceleration electrode being connected directly to A3. With normal electrode voltages, the deflection sensitivity is 250 volts/inch (d.c.) for one set of plates, and 180 volts d.c./inch for the set closest to the electron gun. These voltages are approximately three times those required by the 5BP1 for the same deflection arc, giving some idea of the deflection voltage amplifiers required.

The VCR517C, which is by no means in plentiful supply, has similar phosphor characteristics to those of the VCR87, but this tube needs only 2-3 k.v. under normal conditions and can thus be used with the usual VCR97 tube networks.

Apart from the 3 inch and the two 6 inch tubes, there does not seem to be any others suitable for slow scanning, whilst still having long persistence afterglow-type screens for the receiving end. In this respect, the short persistence P5 and P11 tubes are only useful for the transmitter, a long persistence tube being necessary at the receiver in any case. One P7 tube can therefore be used both for scanning a transparency and displaying an image, with simple switching for the two functions.

Fortunately the 3FP7 has an almost flat face-plate, but the English VCR series have a relatively short radius of screen curvature. This necessitates the use of a flexible transparency which can be spread across the glass surface, otherwise edge defocusing and parallax effects will result.

Little need be said concerning slow-scan circuits themselves, these being more or less the individual's preference, but assuming that the slow-scanned image is to modulate a narrow band transmitter (the narrow bandwidth [4-10 **kilocycles**] of slow scan systems being their main advantage), then there are sure to be some difficulties with integration and differentiation networks and the circuits with which they are used. Accordingly, the single-tube synch. separator, be it a double triode or not, may have to be replaced with two or three valve circuitry, where the synchronising pulses are separated, shaped and amplified, passed on to a control tube, and finally the oscillator themselves. In view of the overall narrow bandwidth of this system, this should not be a great disadvantage. The synchronising pulses, whether used for closed circuit or transmitting work, can be obtained from assymetrical multivibrators in the usual way. ●

# EARLY COPY DATE

All correspondents are reminded that with the approaching Xmas Holidays the copy date for the December and January issues will be strictly adhered to. Copy for the **December** issue must be at P.O. Box 36 by **8th November**, any copy received after that date will be carried over to the January issue.

Copy for the **January** issue must be at P.O. Box 36 by **1st December**, as the printers' Xmas shut-down requires an early issue of January "A.R."

Your co-operation in observing these dates will greatly assist all concerned. Regretably we cannot accept copy received after the specified date, so please post in adequate time, remembering the additional heavy load the Post Office has at this period of the year.


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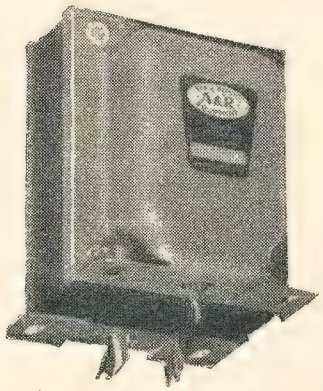

All voltages given are those obtained under fully loaded conditions. Maximum temperature rise 45°C, fully loaded. Attractively finished in baked Silver-Grey Hammertone with Black Cores.

The use of silicon diode rectifiers, particularly in voltage doubler circuits, enables more compact equipment design with reduced heat dissipation from transformer and rectifiers.
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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2062 | 80 | 290<br>265 | 115<br>TAP 105 | 6.3 C.T. | 2.25 | 25 | 3 | 2 | 3½ | 2⅛x2 5/16 | 2⅞x3 | VLN 31 |
| 2063 | 80 | 340<br>315 | 135<br>TAP 125 | 6.3 C.T. | 2.25 | 29 | 3 | 3 | 3½ | 2⅛x2 5/16 | 2⅞x3 | VLN 31 |
| 2064 | 125 | 340<br>315 | 135<br>TAP 125 | 6.3 C.T.<br>6.3. | 2.25<br>2.25 | 16 | 4 | 15 | 3⅞ | 2½x2 9/16 | 3½x3 5/16 | VLN 34 |
| 2065 | 150 | 290<br>265 | 115<br>TAP 105 | 6.3 C.T. | 6 | 10 | 5 | 10 | 3⅞ | 2¾x2 9/16 | 3¾x3 5/16 | VLN 34 |
| 2066 | 190 | 320<br>265 | 125<br>TAP 105 | 6.3 C.T. | 6 | 7 | 6 | 8 | 3⅞ | 3x2 9/16 | 4x3 5/16 | VLN 34 |

Note* — Effective Transformer Series Resistance referred to Secondary

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# SIDEBAND

**Bud Pounsett, VK2AQJ**
22 Seiffert Centre,
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### OLD FAITHFUL

Let us look at the 807 linear amplifier. There are several ways in which you can use this old favourite or its brother, the 1625 which is the 12-volt heater version. You have the choice of operating it in Class AB2, as Class B, as a grounded grid stage, or in the ZL and G2MA linear amplifier circuits.

Linear r.f. amplifiers do not have to be operated in push-pull designs like their audio counterparts. The reason being that the plate tank circuit supplies the missing half cycle by its fly-wheel action. This means that we can use a single tube or a pair in parallel.

As a Class AB2 amplifier, the 807 gives good output and linearity, but suffers from a couple of disadvantages. The grid bias voltage must remain constant under all drive conditions and the screen voltage regulation must be good. This calls for voltage regulators, a "stiff" bias supply and adds to the sources of trouble and expense. Fig. 1 shows an 807 used as an AB2 amplifier—very conventional.

A swamping resistor is required in the grid circuit of an AB2 amplifier. The fact that grid current is flowing only over a portion of the cycle makes this necessary. The load presented to the Class A driver amplifier is variable without the swamping resistor. The swamping resistor presents a steady load to the driver and is usually about 5,000 ohms non-inductive and of about 2 watts rating.

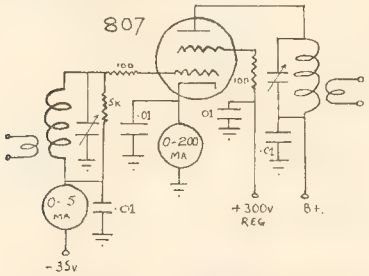


Fig. 1.—807 as a Class AB2 Amplifier.

There are two other ways in which the 807 can be used and I really cannot find any real disadvantages in either. Firstly, there is the "ZL linear" (Fig. 2) designed by Lester Ernshaw, ZL1AAX, and then the "G2MA linear" again taking its name from its designer, David Marshall, G2MA, who is to be heard on twenty regularly. The circuit for the G2MA amplifier is shown in Fig. 3. Note that the difference is in the method of obtaining clamper tube bias. In the ZL linear, bias is developed across the 10K grid resistor, while in the G2MA amplifier, it is obtained by rectifying the r.f. drive with a diode and developing the voltage across the clamper tube grid resistor. By having the grid of the r.f. amplifier and the grid of the clamper tube isolated from one another for d.c. in the G2MA circuit, only a small amount of negative voltage is required to bias the r.f. amplifier to cut-off, if this is required.

In adjusting these circuits, I have found that by moving the slider on R1 until about 15 mA. of plate current is flowing with no drive gives good results. I am using a 6L6 as a clamper although several other tubes would be suitable, such as 6V6, 6Y6, 6F6, 12A6 to mention a few. An EA50 makes a good diode although a crystal diode rated at, at least, 100 volts peak would be most suitable.

I have shown an ordinary tank circuit in the diagrams, but there is nothing to stop you from using a pi output network in your rig as long as you design it properly. This goes for the tank circuit also.

### MORE R.F. IN THE ANTENNA

None of us would use poor impedance matching in hi-fi amplifiers. If the circuits says 10,000 ohms plate-to-plate, we go to great expense and trouble to ensure that the output transformer meets our requirements. Not only does correct impedance matching mean less distortion, it means maximum power transference to the load and cooler tubes.

If we have 150 watts of d.c. input to our final amplifier and only get, because of poor design, 50 watts in the antenna, what happens to the other 100 watts? It is heating our final tube, and with summer upon us, it is sheer waste! Even if our final amplifier tube has a plate dissipation of 50 watts, the tube is being run at 100% above its maximum rating. Does this shed any light on why that expensive 6146 did not last very long?

The answer to all this is so very simple. All that is required are a few simple calculations—hi, come back here, it is not that hard. All you need to know is the plate load impedance of your final amplifier tube and the rest is easy. The tube manual will tell you the plate load you get from the conditions for audio service. Divide the plate-to-plate figure by 2, if your amplifier is single-ended.

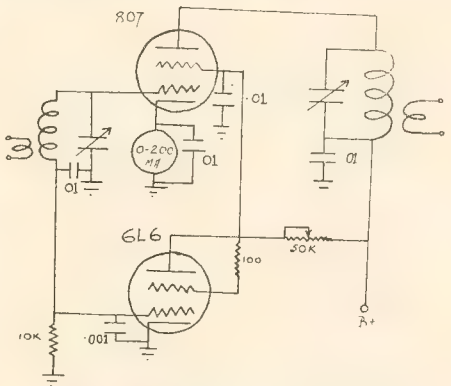


Fig. 2.—"ZL Linear" using an 807.

Let us consider that our final requires a plate load resistance (Rp) of 4,000 ohms. The formula states that

$$\text{Reactance (XL or XC) equals } \frac{\text{Plate Load Resistance}}{\text{Loaded Circuit Q}}$$

so for any frequency, assuming a Q of 15, the reactance is 4,000 divided by 15, or 266 ohms.

Now to find the inductance of the plate tank coil for 14 Mc. We can consult the reactance chart in the Handbook or work it out from this formula:

$$\text{L (in microhenries) equals } \frac{XL}{6128 \times F}$$

where F is in megacycles.

The capacitor required can be found from the same chart or it can be derived from:

$$\text{C (in } \mu\text{F.) equals } \frac{1}{6.28 \times F \times XC}$$

where F is in megacycles.

The coil works out at 3 microhenries and the capacitor at 0.000043 $\mu$F. or 43 pF.

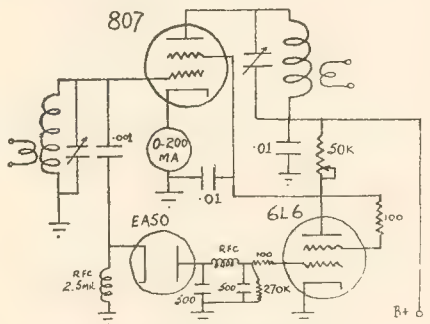


Fig. 3.—"G2MA Linear".

As the capacitance in practice is rather difficult to estimate due to strays, I find it simpler to get the inductance of the coil correct, then the capacitance looks after itself. A grid-dip meter and known capacitance will make this job simple.

Remember, too, that should you decided to use two tubes in parallel the plate load resistance is halved, thereby halving the inductive and capacitive reactance of the tank circuit components. This has a significant bearing on their value—work out the sums and see for yourself.

The calculations for a pi network are a little different but are just as simple and straightforward. The inductance is, for our calculations, divided into two parts but, in practice, is one coil. Fig. 4 shows a pi network. Rp is the plate load resistance, while Ro is the output impedance of the network to suit the transmission line to the antenna or coupler. This is usually 50 or 72 ohms. The reactance of L1 and C1 are calculated as in our previous tank circuit.

XL1 equals Rp divided by Q, and as the inductive and capacitive reactances are equal at resonance, so XC1 will be the same as XL1.

To calculate XC2 use the formula:

$$XC2 \text{ equals } -\text{Ro } \frac{Rp}{Ro\ (Q^2 \text{ plus } 1) - Rp}$$

To calculate XL2:

$$XL2 \text{ equals } -\frac{Ro^2\ XC2}{Ro^2 \text{ plus } XC2}$$

Therefore XL equals XL1 plus XL2.

Now that the capacitive and inductive reactances are known, reference to the reactance chart will give the required values for the frequency involved.

### IN HOSPITAL

Harry VK2AJZ has been off the air recently due to a spell in hospital. He should be up and around in no time, especially as Harry has the watchful eye of Dr. Leo, VK2AC, upon him.

Up there in Townsville, VK4DD has had quite an operation. No doubt many have wondered why that loud signal has been absent from 20 mx, but on information from VK4MF, another Townsvilleite, John is making steady progress.

On behalf of all the sideband gang I wish you both a speedy recovery.

### VOX RELAY

Have you had any difficulty in obtaining a suitable relay for voice control operation? Arch VK3BW suggests you use the high impedance relay that is found in the BC966 I.F.F. unit and available from disposal sources. The coil has a resistance of 12,500 ohms while d.p.d.t. contacts are available. This relay would be suitable for use in the control circuit that appeared in last month's notes and you will have a spare set of contacts for switching out the voice coil in your speaker or maybe controlling your antenna change-over relay.

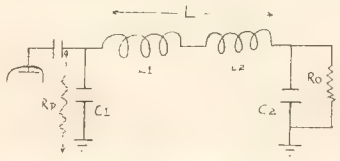


Fig. 4.—Pi Network.

### VS1JV

Up there doing a tour of duty with the Australian Army Signals Unit is John VS1JV. Hailing from Wangaratta, Vic., John is always pleased to have a yarn to VK stations, and being rather a rare s.b. prefix, this usually means going without contacts from much further afield. After John signs with you, listen for the dog-pile that develops!

His present s.s.b. tx is quite unusual as it employs transistors in the low level r.f. and audio stages. The 9 Mc. McCoy xtal filter helps in the generation of the s.s.b. and after the transistors, a 6AU6, 6L6 and finally an 813 in a ZL linear circuit take care of the signal. John has plans afoot to use transistors right up to a pair of 6146 tubes in AB1 and should be using this new rig by now.

For receiving at VS1JV, an AR88 which has been completely re-built, does an adequate job, while a 20 mx, 12 ft. spaced cubical quad antenna squirts the signal in the right direction. By the way, if you haven't worked John at VS1JV, you may have talked to him when he was at Penang in Malaya signing 9M2GR.

**ROBERT CASTRO, TI2RC**

**It is with deep regret that we record the death of Roberto, TI2RC, on 1st August, 1960. Bob was well known among sideband operators throughout the world by his good manners, interesting rag chews and keenness and excellent signal. He will be sadly missed by his many friends far and wide.**

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# D X

**John C. Pinnell, VK2ZR**
15 Summit Avenue,
Earlwood, N.S.W.
Phone: UW 4248.

Sunspots come and sunspots go and with them the great waves of DX activites build up to a peak and then recede to much lower levels. As the years go by the difference between the highs and lows is much less marked due to several causes, among which are: better techniques, greater spread of Amateur population, and the many DX-peditions to places where Amateurs are not normally active. Before World War II. if you passed the 150 mark you were up among the best DXers. Today it is different; 200 countries worked is fairly common and even the 300 mark has been tipped.

Perhaps in the not too distant future we will be able to eliminate most of the sunspot effects by using microwaves and bouncing them off mirror balloons in orbit. This has already been done. We are told that there will soon be many mirror balloons in orbit and that at least one will always be in a suitable position, day and night, to bounce microwaves back to earth.

We Amateurs look on these u.h.f. waves as mostly suitable for "line of sight" communications. Who knows? They may be the DX bands of tomorrow, with greater space for our expanding numbers to crowd into.

## NEWS AND NOTES

VR3KD, Christmas Island, cards are now on their way to the world bureaux or direct if I.R.C. accompanied the requests. The first log sheets from Ken have reached his QSL manager K5ADQ, who is doing his best to despatch all cards as early as possible. K5ADQ, Nikki Boyd's address is: 2271, 34th St., Los Alamos, New Mexico, U.S.A. (K5ADQ)

ZC5AE has been very active over the past few weeks and his policy is to QSL 100% via bureaux. A packet is sent each week via sea mails. He does not wait for receipt of incoming cards. One I.R.C. is not enough to send a QSL at postcard rate from British North Borneo. Single I.R.C's. are passed on to a local children's home.

New activity on Aland Island by two novice class operators is reported. OH0NE and OH0NF are both crystal controlled and work between 21090 and 21150 Kc. and 7030 and 7050 Kc. Being novices, their power is limited to 15w.

JZ0PO is the only active Amateur in Netherlands New Guinea as all others have returned home.

Phonies: Ed KX6CA, who has been quite active on 15 mx c.w. is a pirate, reports the real KX6CA, who operates only 20 mx. Also ZM7DA was heard calling CQ on 15 mx c.w. well after the DX-pedition using that call was over.

Gena UJ8KAA in Tadzhik has been very active early in the morning (1700z) on 21 Mc. c.w.

Walter DL9PF will operate as LX3PF in the c.w. portion of the "CQ" DX Contest.

Sarge SV0WZ is active every day between 1900 and 2100z, usually around 21050 Kc. c.w. QSL via W7FTU.

FQ8HW is active and is located in the new Tchad Republic.

Information concerning the call sign DM3DA/ZNA. In East Germany there are club stations and individual stations. Previously, club stations were identified by the letter "K" following the numeral. Now, club stations are recognisable by the number "3" following the prefix. The "K" that may appear in a DM3 call no longer indicates that it's a club station, but rather that the operator at the controls is "user K" of that club station. At each club station is a license holder (the director) as well as other station users. The director of the station is recognised by two letters after the DM3. For example, the Rostock club station is DM3DA when operated by the director. The other operators of that club station have three letters after the numeral, of which the last two letters are the basic club sign, DA. Thus at Rostock the operators would be assigned DM3ZDA, DM3YDA, DM3XDA, etc., going through the alphabet backwards. If the club station has more than 26 operators, going through DM3ADA, then the prefix DM4 comes into force and the process repeats. Thus, now, DM3KDA would indicate operator "K" at club station "DA".

Heinz Wetzer lives at Stralsund and works at Rostock and is associated with clubs at both places. At his home club in Stralsund he signs DM3ZNA, and when operating the club station in Rostock he signs DM3DA/ZNA.

UL7JA, Kazakh, is now on s.s.b. with 200 watts and a ground plane antenna. He has been worked on 14320 Kc. around 1730z. He speaks good English.

Those who are chasing the W.A.S. certificate usually find Vermont the most difficult state to work. An expedition to that state was made early in August by K1ASJ, K1GMB, K1JHX, K1GMC, and K1IKJ with very gratifying results. They were all so pleased with the results that plans are being made for a return trip this month (November), and also possibly during a DX Contest.

ZD9AM, Gough Island, has been worked on about 14035 Kc. c.w. He is a new one and he said he will QSL 100%, but it will take many months for an exchange of cards as the next mail is not until March 1961. His address: ZD9AM, Gough Island, C/o. G.P.O. Capetown, South Africa, via Tristan Da Cunha, South Atlantic.

It was understood that Ian ZL4JF would be leaving Campbell Island to return to New Zealand in November. So far no replacement has been found to take his place so now he will probably have to stay for a while longer.

K6CQV/KS6, American Samoa, has been active of an evening around 0900z, daily. He will QSL 100%.

Somali Republic.—There are only three active stations from this country at the present time. 6O1TUF is in the southern region of the republic, and 6O2AB and 6O2GM in the northern region.

W0CVU is helping to arrange for an expedition to operate from the Orange Free State (ZS4) in South Africa, to put this rare spot on s.s.b. for the first time. Although not a separate DXCC country, it will be excellent WPX material and a necessity for anyone wanting the All-Africa Award. Details of dates are not yet completed.

PY7LJ is active almost daily from Fernando De Noronha. He is mostly on 21 Mc. c.w. and can usually be found around 21050 Kc. between 1950 and 2150z.

There are two Christmas Islands, one in the Indian Ocean with the prefix ZC3 or VK9; it counts separately for DXCC. The other counts with Fanning Island as DXCC and the prefix is VR3. VR3KD is fairly active from this location and can be heard on phone and c.w. in the 14 Mc. band around 0230 and 1200z.

Ocie HR1OS is being transferred to the U.S. Embassy in Cambodia. He will leave Honduras for his new assignment probably in the first week of November.

Rundy plans to operate as FL7ZA, French Somaliland, from December 8 to 12. (HB9J)

9N1GW has moved from Nepal to Delhi, India. This leaves 9N1CJ, 9N1SM and 9N1MM still active from Nepal.

Have heard several stations calling AC5CQ but have been informed that no Ham operation is legal from AC5 at present. This means there will be no official AC5CQ activity.

C1AAK worked 8/28 says his QTH is "Peking home of true communism" and his name is Keyong. (K5MWH)

R. J. Baty, ex-VK2ANB, is now operating on Norfolk Island, using the call sign VK9ANB. He hopes to be active on all bands shortly. (VK3AOM).

Dominica should soon be a new s.s.b. country. This will be made possible by the delivery of a s.s.b. generator to VP2DA by W3AYD while on a West Indies vacation cruise.

### DXCC LIST ADDITIONS

Dahomey Republic—Confirmations must be dated August 1, 1960, or later.
Niger Republic—Confirmations must be dated August 3, 1960, or later.
Voltaic Republic—Confirmations must be dated August 5, 1960, or later.
Ivory Coast Republic—Confirmations must be dated August 7, 1960, or later.
Tchad Republic—Confirmations must be dated August 11, 1960, or later.
Central African Republic—Confirmations must be dated August 13, 1960, or later.
Congo Republic—Confirmations must be dated August 15, 1960, or later.
Gabon Republic—Confirmations must be dated August 17, 1960, or later.

French West Africa and French Equatorial Africa have been deleted. These two countries will be counted prior to the dates concerning them in the above list.

So far no one seems to know the prefixes or exact areas of the above new DXCC countries, though two that appear clear and apparent at the moment are FF7 Mauretania, and FF4 Ivory Coast Republic.

## ACTIVITIES

Some reports have been arriving too late to be included in the notes for the month intended and, therefore, have been delayed until the following month. To reach the publishers on the 8th of each month it is necessary for me to post them on the 7th. It takes about ten hours to arrange and type the notes, so please let me have your contributions early. I must have a week-end for the job as I work back three nights a week, and at other times may be away from home.

Col **VK2AQU** has been active on 14 Mc. s.s.b. with 60 watts to a doublet antenna and over a period of two weeks worked: DJ1IM several times, JA2JL, KC4USH (Haller Base 72s.), KG6NAA (KH6DHI 7 Mc.), KL7FAZ, VE7ACR, VK9NT, VR1D, VR2AP, W4UCA/KH6, W2FGJ, WA6AMZ, W6SPB, W6YET, W7TMZ/5.

Rick **VK3ARX**, using a ground plane, worked on 14 Mc. c.w.: BV3HP, CT1JY, EP1AD, FA-8RJ, ET3AZ, HP1SB, HZ1AB, HS1R, IC1IN, M1/W4BPD, OR4TZ, OX3UD, UM8FZ, UF6KAF, VQ1HT, VQ1SC, VQ8BC, ZC5AE, 5A2CV. He heard several South Americans during the afternoons at the week-ends. Also Africans are coming through on 7 Mc., early mornings. Since coming back on the air in July '59, Rick's listings show 142/104 confirmed.

Eric **BERS-195** is still hearing plenty, also getting the cards. A card direct from ZP5OG gave him QSL country No. 257. Eric is well known among the world "listeners' and has been mentioned in several overseas publications. The latest is a Russian magazine containing a write-up on his activities. Stations heard, 7 Mc. c.w.: JAs, Ws; 14 Mc. phone: G3NNT, ZE7JR; 14 Mc. c.w.: BV3HPT, EP1AD, FB8XX, FK8AH, FK8AI, GB2CAM, HL9KT, JZ0PO, K0SLD/KW6, LU3WU, KV4CI/KP4, M1/W4BPD, SV0WO Crete, VK8TF, VK5BP/8, VQ9HB, VR3L, VS6EM, VP9QQ, VQ4IA, VQ-8BC, VU2RN, XZ2TH, YV5ANI, ZK1BS, 4X4HC, LA1SH/M, LA7RF/M.

Laurie **VK2AMB** was active on 14 Mc. c.w. and worked HC2VB, KG4AT, VQ1HT, PY1GJ, VR3L, XE1PJ, and heard 9H2GT, UL7KAA, ZL4JF, VU2AJ, VS9OA.

Dave **L3039** is using a regenerative receiver, 1N5 detector, followed by transistor audio amplifiers OC71, OC71, p.p. pair OC72's. This little set is doing a mighty fine job. Stations heard, c.w., 3.5 Mc. SP9DT; 14 Mc. UA4UHC, GW4WB, UA6UI, I1MIL, W3NMX. 21 Mc. c.w.: Ws and Novices during the day. UA1BE, UA4IF, KL7AMS, K0TFP/KW6, UG6AW, OH8KA, GW-3KSQ, JA1BCQ, UA0GF, UA0EH, OH8OR, and DL4NAC during the evening.

George **VK3AOM**, generally speaking, found conditions on 14 Mc. phone better than for many months past. He had many contacts which included: CN8CS, G3FWB, G3NNT, TI-2OEH, VE1IE, VE2AUH, VE3BEF, VE5KG, VK-9RH, VK9ANB, XE2IL, XE2KG, YN1WW.

Frank **VK2QL** was active on three bands. 7 Mc. c.w. worked: G3LET, ZS6NE, VQ4HT, ZE8JW, FB8XX, FK8AT; 14 Mc. c.w. worked: FR7ZD, HH2OT, 5A2CV, YU7LAA, IC1IN, TI-2CMF, M1/I1IN, VQ1SC, VQ1HT; heard: M1/W4BPD, EP1AD, EP2AY, EQ2AT, HP1BR, FQ8HW; 21 Mc. c.w. worked: VQ8BC, VQ4HT; heard: ZD1AW, 7GIA.

**VK2ZR** found the 21 Mc. band wide open over long periods of the day for about 12 days early in the month. 73 DX stations were worked including VE8RX, YV3AS, SP7HX, ZS6DR, VU2XG, ZS6NE, ZS2OB, ZC4PB, EA1BC, I1MD, GM3NPM, UB5KCD, OD5LX. 14 Mc. c.w. worked 51 contacts, SP3QD, GI3GRY, OH9PF, HB-9YN, I1MIL, GW3KSQ, HA8CF, OK2OV, YO-7DL, LU3WU, HP1BR, etc.

Ray **VK5RK** has been active on 14 Mc. c.w. and has worked DJ3BB, EI4B, KL7IR, KM-6BI, EI9Y, G6GM, G6YQ plus Ws and many others. He also enclosed reports from 5RX and 5GM.

Ron **VK5GM**. Among those worked on 28 Mc. phone were CR7BC, FK8AU, G3CLW, JA-7GB, JA3ACT/MM, K6CT, KA9JG, K5PXK/KH6, KL7DIR, OH5SM, SM7RS, UA3QBU, UA0DZL, VE5GN, VK9RM, VK0WH, VE7BBG, WA6AJI, VS9AJW, ZE1JJ, ZS2YK, ZS1PV, and 9M2GT.

George **VK5RX** is hoping IC1IN and UT5CC will count for DXCC purposes to add to his 253 countries already worked. His 14 Mc. c.w. list worked includes: VR3L, IC1IN, UT5CC, ZL3VB, FB8YY, PX1PF, YV4AU, LU1DEN, LU3HL, EA7CP, ZB2I, SP8KDW, GM3FPX/A, numerous DLs and Gs.

My thanks to Don Chesser for the use of items from his excellent "DX Magazine" and to the West Gulf DX Club Bulletin for valuable information. Also thanks to the VK gang who supplied notes. 73 John.

z zero time—GMT.

# V H F

**Frank P. O'Dwyer, VK3OF**
190 Thomas Street,
Hampton, Vic.

## 50 MEGACYCLES

Now everyone has had their taste of JA DX for the new season, from VK2 to VK7. Oct. 8 saw VK3 and VK7 catch up with good sigs. each way. Other Divs. made the grade in August, VK4 of course earlier. KH6 also made contact into VK4 while that Div. also listened to KG6 working JA. Unfortunately the KG6 boy closed down not realising that the band was open to VK. Frustration hardly describes the gang up there.

David 3QV reports: "VR2DF in Suva states that there is no current or proposed activity in VR2 land on 50 Mc. and that there has been no legal activity from there over the last couple of years." Harold VK0WH, at Macquarie Island until Christmas, has 50 Mc. gear built by Fred VK3YS plus a 3 el. beam 20 feet high. He is prepared to run skeds and auto. c.w. if there is someone at this end to listen. A t.v. set is available to monitor Channel 2 but Harold has heard no sigs. on either Channel 2 or 50 Mc. to date. He has run arranged skeds with W land. VK0ED on Davis is reported to have a vee beam for 50 Mc. in operation. (3ZDG).

From Paul J. Edwards, VK7ZAJ, C/o. Physics Dept., University of Tasmania, Hobart, comes an urgent request, one which requires the active co-operation of all 50 Mc. men in the various Divisions, particularly VK4 and 6. Participation in his research project should be the bread and meat of Amateur operators, an answer to those critics who say "what use are you to the community," a personal build up when you are told "your only use is to cause t.v.i.," and an indication to the powers that be, those possible nibblers at our bands that the Amateur is worth his salt and place in the frequency allocation. What better than quote his letter.

"Although new to the 50 Mc. band myself, I am particularly interested in propagation modes at this frequency. My research work in the Cosmic Ray Group at the 'Shop' here is primarily concerned with solar controlled events. As TE on 50 Mc. is a relatively obscure result of geophysical activity, I am keen to obtain reception reports of Russian t.v. on 49.75 Mc. Preliminary results indicate a close relationship between TE t.v. reception and solar flares. These reception events are, however, relatively infrequent here and conclusions could be strengthened by reports from say VK4 or VK6 where they are more frequent. If anyone could be of help in this respect, the programme would be given a considerable boost. Of primary interest are the dates of t.v. reception at various locations. The direction, propagation, strength and fading characteristics of the signals are also of very great utility. Another interesting characteristic would be the zenith angle of maximum received signal strength as this may indicate what type of guiding or reflecting mechanism is involved. I would very much appreciate any help you fellow Hams can offer. All reports will, of course, be acknowledged. I feel that Amateur and/or S.w.l. reports may be useful in elucidating some of the mechanisms involved in the strange things that happen on v.h.f." (7ZAJ).

Now let me introduce you to David Tanner, VK3ZAT, that is if he needs any introducing. David is taking over the job of sub-editor for the v.h.f. page. An active and successful v.h.f. DX man, always available for local contacts, David should introduce freshness and vigor to the v.h.f. page. You Divisional scribes, those who have passed on the job and those writing now, together with all those other unofficial scribes, have made my job easy. It has been a pleasure to work with you all and I offer my thanks now for all that you have done. Notes in the future may be sent either to VK3OF as in the past or to P.O. Box 36, East Melbourne, C.2, Vic.—VK3OF.

### NEW SOUTH WALES

**General.**—The monthly meeting of the V.h.f. and T.v. Group was very well attended to hear Alex Slight 2ZA lecture on "Shifting the Frequency of Crystals." This was a "do-it-yourself lecture," full of practical details and know-how. Full instructions and equipment were given including the 10 x 10 x 1 inch thick rubber pad which Alex assured us was necessary and was to be placed on the edge of the table to bang your head against when you fractured a crystal after hours of work. This was the first of two lectures designed to solve the problem of "dogpiles" on the 144 Mc. band. The second lecture by Alan Bird 2QW will cover "Improving the Selectivity of Rx's" and is set down for the Oct. meeting. The Nov. meeting will hear "The How of Microwaves" and is set down for Nov. 4.

Activities during the month of Sept. included a night hidden tx hunt and an all-day programme fox hunt. Winner of the latter was 2PM with three catches, and 2AWZ/2ANF, 2OA and 2ZAH with one catch each. The night tx hunt was won by Lance 2ZKP with 2OA/2ZAV second and 2ZNM third. Barry as fox picked a boggy location and proceeded to get bogged himself before the start. However, 20 minutes saw him out. Luckily no hound was bogged later. Several cars made a Cooks' tour around several headlands in Kuring Gai Chase where 2ZAG was hidden. Neville 2ZNM provided some amusement with his p.a. type sniffer which could be heard coming up out of the bush for quite a distance.

**50 Mc.**—Still very quiet. A note from Trevor 2FR on Lord Howe Island advises that Ron VK2ZRF will be operating from there shortly on the band. This is one to watch out for. Further information via VK2ZAG.

**144 Mc.**—Activity is rising with 2ZAH, 2ZEX and 2ZGR appearing on the band in recent weeks. Your scribe has worked 123 stations on this band but alas does not have 123 cards to prove it. What about a claim to the most stations worked? (AND confirmed). QSLing is not strong among the v.h.f. fraternity but the prospects of a V.H.F. D.X.C.C. in VK should be within the reach of many. There has been quite an increase of mobile operation during the week-ends over the last month, even when no planned event takes place. It has even been rumoured over the air that 2HO might go mobile. What about it, Roy.

**576 Mc.**—Activity is not as strong as a few months ago, however 2HO has been heard at S9 plus at numerous locations. The QQE03/20 seems to have become standard equipment for this band and it is certainly a good tube for this frequency. However, it is rather an expensive item and this is a discouragement. Someone who finds a supply of suitable tubes at a low price will prove extremely popular with prospective 576 Mc. candidates. So far most operators on this band are using ASB7 or 8 rx's but supplies of these are exhausted. Eventually someone will come up with an economical crystal locked converter. Perhaps Winchy can be interested in this one.—VK2ZAG.

### VICTORIA

**50 Mc.**—Reports indicate all quiet on the DX front for the past month, but things should liven up shortly. Let us hope so anyway. 3VL and his antenna farm survived the severe wind storm that hit Numurkah late in Sept. The 28 Mc. beam up 54 feet suffered minor damage due to bits of flying corrugated iron, but the 50 Mc. beam came through unscathed. Rex has deserted 50 in favour of 28 for the time being but says he will be back when 28 closes down. Warning! Michael 3ZEO has a tape recorder and is getting up to all sorts of fiendish tricks with it, so when working that gent watch your step.

**144 Mc.**—3ZCG is on the move again, this time to Kooweerup. George appears to be getting closer and closer to Melbourne. 3ZCJ is active from Mt. Franklin (near Castlemaine) and Mt. Dandenong with mobile gear. Other portables reported were Ron 3ZER/3, Maryborough; Richard 3ZHY/3, Mt. Dandenong; and 3ZAV/3 at the Geelong Amateur Radio Club, worked into Melbourne on several occasions. Another club running an exhibition of Amateur Radio is the Victorian Railways Institute and the club station, 3RI, was on deck for demonstration purposes. New and seldom heard calls lately include 3LC, 3ALK, 3AXT/3 East Malvern, 3RI, 3ZKP and 3AVP. 3AVP's call appeared as 3ABP in the Sept. notes, my mistake entirely, so please accept my apology Vic. Do not forget the activity night every Friday evening. At one stage Friday appeared to have the least activity of any week night and that was not the intention.

**Moonbeam Project.**—As most are probably aware, successful two-way contact has been made between W1BU and W6HB on 1,215 Mc. bumping the world record to 2,700 miles although the actual distance covered by the signal was much longer than this since it was bounced off the moon. Full details are in the Sept. "QST."

Perhaps the next Moonbeam contact may involve Australia since the Group here has obtained a 4 x 150A, a 2C39A and a 432 Mc. cavity. Construction is about to start on a 20 ft. dish of which a scale model has already been built. Quite a nice one, too, judging from the photo that appeared in a Melbourne morning paper together with the constructor, Jock 3ZDG. The Group here have been greatly encouraged by the offer of assistance from the Rhododendron Swamp V.h.f. Society of Medfield, Mass. (W1BU), so it should not be too long before things become operative.

**Vh.f. Group Meeting.**—The Sept. meeting included films and discussion on field days. Nothing definite was decided for the latter and details are to be finalised at the next meeting. No further reports this time so 73 until next month.—VK3QV.

### QUEENSLAND

**50 Mc.**—No listening here until Sept. 11 when I turned on 1200-1300. No DX not even Bill 4WD. 12th, Noel 4NB getting a 6 mx converter going, coming in fine on 40 though. Worked Mick 4ZAA at 2003. Mick reports hearing John 4PU and Len 4ZBS carriers, also worked Ron 4ZBZ. Have been looking north all this month for Russ 9XK, but no luck so far. 14th, HLKA and JA1IGY, also JA1, 2, 3, 7, 0 at S3 to 9 on F2, out at 1915. 18th, worked JA1CQB, so gear here still works. 4ZBS, 4ZAA only ones heard that evening. At 1825, JA2AVO was collared by me. Quite a lot of new call signs in JA land. 19th, JA1 and 2 heard on F2, also heard them working Es. 1930, HLKA S1 to 3 F2. 1940 scatter type sig on 49.84 to S5 but no JA DX. 22nd, 1900/2000 JA1, 3, 7, 9, Q5, S2, F2. 23rd, 1800/1900, no DX. 24th, 4ZAA reports working a K6/KH6 and swapped reports at 1800. 4ZGL heard a JA8 at 1200. 1930/2015 JA2, 3 heard and worked, also 4WD and 4ZAA. 26th, JA1, 2, 3 on TE at S2, 2003. Local conditions here very poor. 29th, turned on here to hear KG6/W signing out with JA-1BMV and signed off till 2100 hours. JA's about last evening also. Had a few local contacts, 4ZBF running 1½w. to a 2 el. beam, 4ZDK, also heard Ron 4ZDS on at 5 x 3. Best time Ron is from 1930 to 2015; anyway Ron, welcome to 50 Mc.

**General**—The "Do" at Cotton Tree/Maroochydore on 25th Sept. was quite a success. Believe about 60 odd h.f., l.f. and v.h.f. boys, XYLs, harmonics and YLs present. Me, I was picking strawberries. I consider John 4PU should be nominated co-reporter for v.h.f. notes and this after his literary efforts for a local newspaper were heard by me. How about it, John? Len 4ZBS is building a steel tower. Will be 45 ft. and using a 4 el. job. Also reports digging up another interested party in Nambour. Get him onto his ticket, Len. It is hot and dry up here, not good DX weather. You lucky blokes down south with all that rain. Want some dust? Can guarantee at least 3 ft. of it.—VK4ZBI.

### SOUTH AUSTRALIA

**50 Mc.**—Last month VK5s were favoured with only one 50 Mc. band opening being on the 25th Sept., when some very weak JAs were audible. In addition, all the usual peculiar carriers were in evidence just below the band edge. Ron 5MK, Bill 5ZAX and a few of the locals were calling the JAs but very few, if any, were actually worked. There have been no recorded Interstate openings on 6 mx.

The V.h.f. Group conducted a scramble on the evening of 25th Sept. at 2000 hours with Eric 5ZDQ as control station. The scramble was very successful with 14 stations participating in the first event and slightly fewer in the second, due to t.v.i. and other causes. Three stations, Al 5ZCR, Garry 5ZFM and Barry 5BQ tied for first place in the first event. In the second, Garry 5ZFM put on a spurt, winning outright by 2 points to give him the highest aggregate score for the evening. Good work, Garry!

Two fairly new 6 mx gents, Bob 5ZFG and Ken 5ZCH, have been very active on the band last month with good signals and are welcomed. Both stations have been on 288 Mc. also. Mick 5ZDR has not been quite so active from the home QTH recently, due to t.v.i. and complete lack of co-operation on the part of the complainant. We hope the situation soon improves Mick. Congrats. to Neil 5ZDH and XYL Jay on the arrival of a new son. A good mobile signal was heard from Hughie 5BC while visiting Adelaide. Hughie uses a 2E26 final, modulated by p.p. 6V6s. John 5ZCJ has his new mobile going with a 2E26 final and used it to compete in the abovementioned scramble. Incidentally, two other scramble competitors were mobile, being Mick 5ZDR and Ron 5MK. All did quite well.

Another new 6 mx mobile to be heard soon will be Vic 5JH who no doubt will be worked as a portable from various remote QTHs. Details of his proposed trips are usually announced by Al 5ZCR over 5WI on Sunday mornings. Stuart 5ZDG has purchased some commercial mobile equipment and he is in the process

(Continued on Page 15)

# CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

### LEGAL POWER LIMIT

The Editor suggests that those Amateurs currently using above the legal power limit cease this practice, as if they do not do so, then the next letter will no doubt not be a request but a demand from other quarters.

Listening around the bands it becomes evident that a few Amateurs are using a well known piece of commercial gear "barefoot," then feeding this into a type ——— final. As the commercial gear already runs the permitted power input, then the final must be exceeding the authorised limit, and no one will be fooled by the statement that these few are "running 150 watts average input." So chaps, you are requested to note this suggestion and act upon it in the spirit in which it is offered.

—K. M. Cocking.

### A.T.V. NEWS

Editor "A.R.," Dear Sir,

I have endeavoured to write the A.t.v. Notes for some time now. Due to illness in the house I will not be able to continue with the notes. I do hope someone will be willing to take on the job.

I would like to take this opportunity to thank all those who have sent in news to me of their a.t.v. activity, and hope they will continue to do the same to whoever takes on the notes. To those who have not co-operated as was expected I do appeal to them to assist in the future.

While not wanting to enter the controversy on a.t.v., I feel I must say that the letter in October "A.R." was not with my knowledge.

The following books may be found helpful to anyone starting on a.t.v. gear, such as a flying spot scanning,

"An Introduction to Amateur Television Transmission," by Michael Barlow; 7/6.

"Electronic Novelties for the Constructor," by E. N. Bradley; 7/6,

and for the more advanced, when building a t.v. camera,

"Closed Circuit and Industrial Television," by Edward M. Noll; 47/3.

I would be pleased to hear from anyone interested in a.t.v. I am on 7.1 Mc. most days at 1230 and 1800 hours.

—W. A. Brownbill, VK3BU/T.

### DIATHERMY INTERFERENCE

Editor "A.R.," Dear Sir,

Noticed a letter in October's "A.R." re diathermy interference (J. G. Reed, VK2JR).

I heartily endorse this gentleman's remarks, and would like to point out in particular one such device which is causing severe interference on the 28 Mc. band.

Reports have come from South Africa, New Zealand and various parts of VK6 and I have personally put in several reports through the local Advisory Committee about it, but apparently officialdom prefers to ignore same.

It appears to originate in the Melbourne area. It wanders up and down between 28.00 and 28.75 Mc., and has been in evidence in nearly every band opening to VK3 over at least the last two years.

Apparently, we have to like it or lump it.

—Bob Elms, VK6BE.

### S.W.R. MEASUREMENTS

Editor "A.R.," Dear Sir,

I wish to take exception to the article in October "A.R.," "S.W.R. Measurements with the TA33 Jr. Triband Antenna."

The whole of this article, i.e. the curves and interpretation of them is based on the quoted formula:

$$\text{S.W.R. equals } \frac{\text{Forward power plus reflected power}}{\text{Forward power minus reflected power}}$$

This formula is not correct. The correct formula to use is

$$\text{S.W.R. equals } \frac{I \text{ plus } J}{I \text{ minus } J}$$

where I equals forward current and J equals reflected current.

The quoted examples of S.W.R. equals (100 plus 28) divided by (100 minus 28) to give an S.W.R. of 1.8 to 1, should read: S.W.R. equals (square root of 100 plus square root of 28) divided by (square root of 100 minus square root of 28) equals 15.3 divided by 4.7 to give an S.W.R. of 3.25 to 1.

The other example quoting S.W.R. equals 1.2 to 1 should in fact be S.W.R. equals 1.92 to 1.

Another point is the location of the measuring device, the assumption being that the measuring device was inserted into the feeder at the transmitter end.

In this case a correction factor should be used to correct for the attenuation of the feeder (which at these higher S.W.R's. will not necessarily be negligible) both for forward current and again for reflected current.

—C. B. Edmonds, VK3AEE.

### MORSE CODE

Editor "A.R.," Dear Sir,

If Mr. Roth Jones (October "A.R.") honestly believes that c.w. is languishing and will soon die out, I'm afraid he is deluding himself. From the tenor of his remarks I would suggest he has had one eye removed and replaced by a phase-shift network.

A tune over 14 Mc. any night of the week will prove to him that c.w. stations outnumber s.s.b. by roughly 4 to 1. Apparently a few Amateurs still enjoy using c.w., which should be sufficient reason for its retention.

As for his suggestion re the re-allocation of frequencies, what is wrong with his s.s.b. gear? The s.s.b. addicts claim that only half the bandwidth is required so that their 75 kc. should be more than adequate—being the equivalent of 150 kc. of a.m. or c.w. allocation.

Incidentally, just in case I am accused of being one-eyed, I may add that I operate a.m. and c.w. on all bands to 144 Mc. I have nearly completed a xtal-filter s.s.b. rig for 7 Mc. and 14 Mc. (I did not find it necessary to buy the latter ready-made.)

—Bob Elms, VK6BE.

[Owing to lack of space in this issue, other letters on the same subject have been held over until the next issue.—Editor.]

## THE ROSS HULL MEMORIAL V.H.F. CONTEST, 1960-61

(Continued from Page 7)

### RECEIVING SECTION

1. Short wave listeners in Australia and Overseas may enter for the Contest, but no transmitting station may enter.

2. Contest times and logging of stations on each band are as for the transmitting sections.

3. To count for points, logs will take the same form as for the transmitting sections but will omit the serial number received. Logs must show the call sign of the station heard (instead of worked), the serial number sent by it, and the call sign of the station being worked.

Scoring will be on the same basis as for transmitting stations. It is not sufficient to log stations calling CQ.

4. A station heard may be logged only once per calendar day on c.w. and once per day on each phone band for scoring purposes, but additional reports will be of value to the F.C.C.

5. **Awards:** Certificates will be awarded to the highest scorer in each VK and Overseas call area.

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## NEW RATES FOR HAMADS

The Publications Committee advise that as from the December issue of "A.R.," Hamads will be charged at the minimum rate of five shillings an advertisement of thirty words, which is a reduction on the previous rate.

All ads. must be accompanied by payment and additional words will be charged at twopence a word. No phone ads. will be accepted, nor will receipts be issued as from 1st December, 1960. This change has been made to simplify office routine, and reduce the cost of advertising, as the survey indicated the majority of ads. contain approximately thirty words.

## V H F

(Continued from Page 14)

of modifying it for 6 mx. The power input will be low (approx. 5w.), but he should be heard quite well. Mobile activity generally over the past month has been good with VKs 5ZDR, 5ZAW, 5MK, 5ZAP, 4ZAX/5 and 5BQ heard regularly. Brian 5TN is on almost every night sending m.c.w. for the benefit of Al 5ZCR and Joe 5ZCP who are intending to sit shortly for the full ticket—good luck boys. There are several other undetected listeners also, so Brian's efforts are appreciated by all.

**2 and 1 mx.**—Two metres hasn't altered much except for one new 2 mx station, Brian 5TN, who has had several cross-band duplex contacts. Al 5ZCR is perfecting his new c.c. 2 mx converter which features two c.c. mixer stages and an i.f. tuned by an MN26C Compass rx, making triple conversion in all. When completed it should be the ultimate in 2 mx rx's. Brian 5TN is the latest to have 1 mx c.c. gear and has worked several stations including Vic. 5JH on his portable trips into the country. Ken 5ZCH is another regular 1 mx contact in Elizabeth.—VK5BQ (ex-5ZBZ).

### WESTERN AUSTRALIA

The last fox hunt was provided by 6BE and Les Cloud, the tx being hidden in a mountainous portion of Lesmudie. Roy 6ZBZ was the first by a narrow neck (or radiator cap). Supper followed at the home of Les and Rae Cloud in Kalamunda. DX livened up on 6 mx during the month of Sept., JAs being worked on 8th, 15th (TE) and 18th. Since then there has been four fair openings. The 21st, I worked eight JA stations in the 80 minutes I was home. Band was still open to HLKA and Russian t.v. (two stations this time) when I arrived home. At 1915 I worked three JAs on evening TE scatter. This is the second TE opening in a fortnight. The 22nd, Russian t.v. was coming in weakly at 1500 W.A.S.T. and it appears likely that JAs could bob up at any time. HLKA and the Russian t.v. have appeared at colossal strength on several occasions. Unfortunately interference from ABW Channel 2 renders it impossible to resolve pictures from Russia in Kalamunda.

Ian 6CL is back on 6 using a rhombic over the 120-mile path to Perth. He has also been working the JAs with more success than most Perth operators. Jack 6BU is back on the breeze with a brand new v.f.o., 815 tx, which appears to work well. Several of the boys have gone transistor, both Cedric 6ZBC and Noel 6ZBG using transistor converters with very good results. Brian 6ZBJ has found new employment in Geraldton 290 miles north of Perth. He hopes to have his 150w. back on 6 within a month. JA working should be particularly good from that location.

Another new call 6ZCX has appeared on 6. Hope you have a good time on the band OM. Russ 6ZBX was most unfortunate in missing out on his c.w. for the full ticket. Thought that he mised the receiving, so didn't attempt the sending. Got a slip from the authorities, "Receiving, pass; sending, not attempted. It will be necessary for you to . . ." Bad luck, Ross, start again. Bill Wedermeyer (my protege) goes for his ticket in October. If he misses I will eat my Geloso. Bill already has an imposing home grown listening set up. His latest is a home built turret tuned converter (as per "A.R.") which runs six bands from 3.5 to 50 Mc.

**T.V.**—Francis 6WD has joined the square eyed company and is trying his hand at t.v. watching over a 150-mile path. I believe that he is having some measure of success. Also that he is having some trouble with "ringing" halo in his picture but whether this is the set or the tx is open to conjecture. 6VK informs me that something may be done in the line of a.t.v. on 238 Mc. in the near future though nothing definite can be stated at present. Incidentally, Vic is now on 6 using a.m. and a 2 el. beam. 6VF is now under the roof of 6HK and some use of the call as a beacon will be made during DX periods. Frequency is 50.001 Mc.—VK6BE.

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## "A.R's." ANNUAL ISSUE

October "A.R." is available from the Victorian Division for 2/- a copy and additional copies can be supplied as long as stocks are available. All requests to Administrative Secretary, P.O. Box 36, East Melbourne, C.2, Vic., enclosing money with your order. Act now and obtain your spare copy. The previous special issue is now a collector's item, so don't miss out this time on your spare copy.

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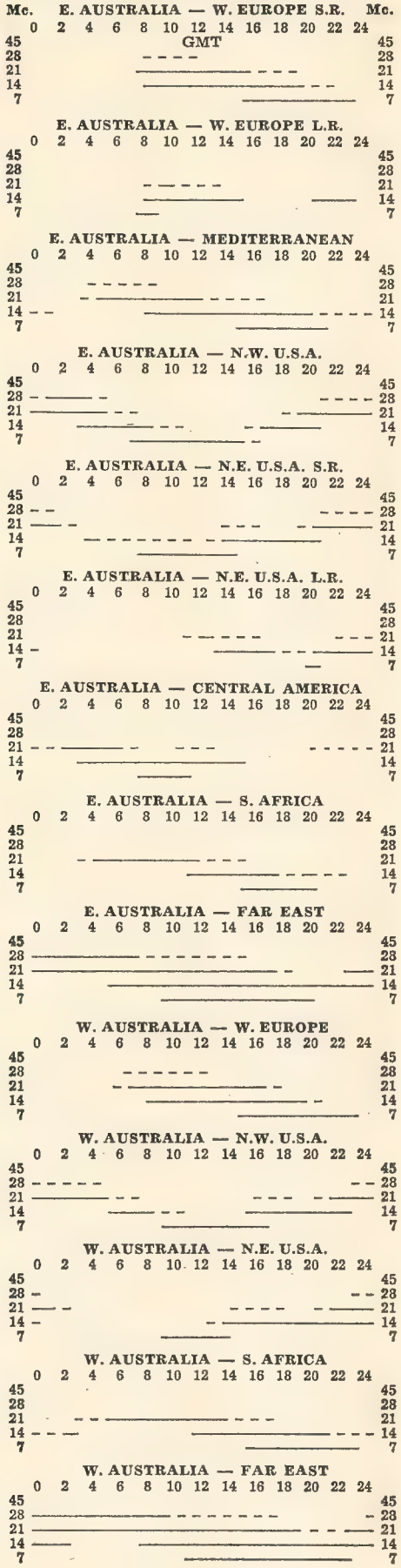
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W. AUSTRALIA — S. AFRICA
W. AUSTRALIA — FAR EAST

# S W L

**Maurice Cox, WIA-L3055**
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

Fellow s.w.l's., here is your scribe once more, with the news and activities of the VK s.w.l. I hope the bands have been kind to you in the way of DX. If so, why not write me a letter so that all s.w.l's. know what you have heard. While you are about it, tell me something about yourselves and your equipment.

Did you like last month's page and a half? I would say it is the first time in history that the s.w.l. page has gone over one page. It shows that I'm getting what I ask for and that's news of and about you; so keep writing to me.

I haven't had any queries re the S.w.l. Convention next year. Who is going to be in it?

Have received one photo for inclusion in next month's issue. We of the s.w.l's. hope that there will be a lot of logs entered in the VK/ZL Contest. This item of news will be of interest to you all.

**Awards.**—It was decided at the last VK3 general meeting to establish two award certificates to all world-wide s.w.l's. Firstly, H.A.V.K. (heard all VK). This award will be issued to the holders of 12 cards; they should comprise of VK1 through to VK8; two from any VK9 area, and two from any VK0. Secondly, the VK S.w.l. DXCC, which will be of 100 cards from any 100 different countries. More details of these awards in next issue.

### THE STATES' NEWS

**Albury Radio Club.**—Down in this corner, there is not a lot of listener activity, but it is noted with satisfaction that one of the members, Milton Richardson, was an entrant in the R.D. Contest. His score of approx. 350 points is very good going for a newcomer to these events and he is to be congratulated on his effort. We must, at this stage, make note of the assistance given to associate members in this club by Don 2RS in particular. Don has made his shack available to the club for their Friday night meeting and his mode of instruction. I feel sure, will in time add to the number of Amateurs in this town. Herb 2QD assists in a similar manner and it is fortunate that there are two such willing helpers who, despite a severe tax upon their patience, still continue to hold the fort. C.w. instruction is in the very able hands of Art 2EU.

**VK2.**—Official reports from the VK2 Group are very rare these days. Listening to the Sunday broadcast from 2WI, one could be excused for thinking that all the Group was doing, apart from listening to commercial radio, was assisting the Division with bulletin folding and such tasks. Now I am not trying to belittle the work of these fellows who assist Norm in the various tasks around Atcheson St. and Dural. But how about something being done in the listening line. The VK2 Group has the biggest list of issued listeners' numbers—200 according to the Call Book—three times more than the VK3 Group, but do I get any reports or letters for this page? No!

You chaps in VK2 land would be the first to growl if I stopped writing this page. I and several others are trying to build up the s.w.l. group in VK land, so that one day you chaps who become Amateurs will take your position alongside other Amateurs. And whilst you are s.w.l's. what you will learn will help you to become good operators. So while you are listening, help others to help you. Just remember that W.I.A. Amateur organisation which, if the commercial people had their way, would be out of existence. Support for the group has always been hard to come by for the office-bearers. Contests have been organised and not supported.

It is understandable therefore that the Secretary and his fellow workers become disappointed at the lack of interest in their efforts. What about it chaps, support your Group more fully even if you don't agree entirely with them. Give the Secretary a bit more help instead of leaving it for the other fellow to do. I am, in case you don't know, Secretary of the VK3 Group and I get plenty of support from our President Mac, our Asst. Sec. Tom, and we function quite well. So hop to it lads, you will find it all to your advantage.

**VK3.**—Frosty Fraser is to be congratulated as with his recently obtained H.R.O. and 68 ft. end-fed antenna, he won the Contest of the Month (number of countries heard on s.s.b.). He heard 54, which was a mighty fine effort. Yours truly ran a very close second with 52. Mac, our President, 47. There were quite a few logs entered, which was very pleasing to note. Bert 3ZGD is donating a trophy to Frosty at our next meeting.

About three weeks ago a dozen of us went to the Geelong Amateur Radio Club Exhibition. Quite a few of us came away with sore eyes, because of the very nice range of rx's we saw. It was a very good exhibition, which was enjoyed by all. At the last general meeting 12 s.w.l's. were present and we discussed and passed the two awards. At the next meeting the organising committee will map out our next twelve months of activity. On 6th Oct. we paid a visit to the transmitting site of GTV9 at Mt. Dandenong and we spent two pleasant and interesting hours and we now know how we receive that one-eyed monster's signal. Our thanks go to 3RF, one of the technicians who explained everything to us. Thanks Ian for arranging such a nice visit.

Tom Hayward is going to put up a beam, which I think will look like an Indian's bow. It's to be constructed of bamboo. I have put up two W0 Windham type antennae; actually, one was up before, so one is north by south, one east and west. Have a switch arrangement to go from one to another.

**VK5.**—Their last meeting was held at the Wesley Hall, Mt. Gambier, but owing to school holidays some of the s.w.l. were away from the district. There were six s.w.l's. present and after the meeting they visited 5KU, E. Stanke. Whilst they were there, he made contact with W8AAG on c.w., but didn't have luck with phone calls.

Fred L5020 received a letter from a W.I.A. member in Adelaide, wanting to join the ranks of the s.w.l's. And at the present the member is using a 5-valve dual wave, but hopes to receive a Bendix shortly. Colin has now heard 91 countries, but still only two confirmed. His rx operates on 10 mx—not good, but 15 is a snifter. He puts in a P.S. and I quote: "While at 5MS' shack this Sat. afternoon, Dale L5025, Trevor L5030 and myself had the pleasure to have words with Steve G3NNT in England. He is 19 years old and has only been on 13 months; puts out a terrific signal into Australia." He sure does Colin.

**VK7.**—The new Secretary of the VK7 S.w.l. Group has written to me and his name is Michael Jenner, from New Norfolk. Thanks for the letter Michael, it is pleasing to know that you are all still alive down there! It's good having a lot of correspondence don't you think. I would like another pair of hands and another head, hi, then I would keep up with it all. I've been that busy this last two months that I have only sent out two s.w.l. reports. Anyhow, Michael makes mention of the following. They have quite a few items of interest on the go for the boys over there at the moment.

Every second Sunday morning he is going to put a bit of news over the W.I.A. broadcast personally, so that they are a little more in line with the licensed fellows. They also have a few lectures and a visit to the P.M.G. Monitoring Station on the hook. It looks as though the next few meetings will be very interesting. Michael goes on to say that the main trouble is lack of attendance. The same half dozen turning up each meeting night. What's wrong with your s.w.l's.? Thought you liked visits and lectures. What about turning out to these events? By the way, Mike is using an AR7 rx with a KS9er aerial matching and r.f. amplifier unit plus a 6 mx converter. The antenna is a half wave folded dipole on 40 mx, made from t.v. ribbon. Thanks Michael for your first letter, hope there is more to come.

### OVERSEAS NOTES

It is with much pleasure that we can announce that one of our regular contributors, Colin Hutchesson, L5031, was the outright winner of the N.Z.A.R.T. Memorial Contest this year. It is most pleasing to see one of the younger members having success of this nature. The results are more impressive for the reason that Eric Trebilcock was second and Don Grantley third. Congratulations Colin, see you in the VK-ZL.

Bill Edwards, K9MXL, of Indiana, and his mother, K9RUS, have both passed their general exam., and are now on the air on most bands, including 6 mx. Both will QSL OK and any reports can be sent via Don L3088 at Box 145, Albury.

DX activity these days has gradually moved to the s.s.b. segment of 20 mx and some of the prefixes heard there are really rare regardless of which mode you prefer. The S.s.b. Contest which is being conducted currently by the VK3 Group has brought to light some very interesting calls, so we suggest you newcomers listen some time in that part of the spectrum. It is necessary to have a b.f.o. on your rx to receive them, however don't hesitate to fit one, for your efforts shall be well rewarded.

### CORRESPONDENCE

Letters received from L3042 (BERS-195), L3088, L3039, L3089, L3077, L3074 and two lone ones from L2211, L7007. L3042 writes that he will be a definite starter for the S.w.l. Convention at Shepparton, circumstances permitting. Well, how about that s.w.l's., our master of s.w.l. is going to come and meet us all. So come one, come all. He says the QSL manager's job is going f.b., keeps him busy, but he revels in it. He sorts over 100 cards per day and tells me he has seen very few countries' cards that he hasn't got and he would like to hear them sometime. He says 3RJ is now in W2 land and has had a good trip so far. Eric travelled practically all over Victoria during the school holidays with his XYL and son. He called in on L3088 and had a chat. I wonder what that was about? I'll bet it was DX. Thanks for the letter Eric.

Now from L3088, and I quote: "Jock ZL2GX sends his thanks for publicity given their Memorial event and although it didn't draw a lot of s.w.l's., it did catch a lot for the tx section. Heard the broadcast today, it was very good, particularly your notes.

"Re last article in "A.R.," some sarcastic comment has been tossed this way re my comments on ground planes. Now we all know these things are not a good rx antenna, they are too noisy, OK? Well this miniature effort is really good in the country, I have proved it. It's not too good where there is noise, but the article refers to Mt. Raven at Holbrook which was entirely free of any form of manmade interference. In fact I am going to use it for 10 here, in due course."

Kevin Walsh, L3089: "I feel that I ought to tell you of my experience in Army camp as a cadet signals operator. Being of some rank I was in charge of a section and consequently had at my disposal the transceiver. I don't know if you have heard of a WSA510, containing in all nine valves, four tx and five rx; it can be used on c.w. and phone. The rx tunes from 1.5 to 10 Mc. through two bands. Of course the tx depends on its aerial for range. Being only 400 yards from control, I used a simple 8 ft. whip fo rtx'ing. However, when used in conjunction with the provided dipole aerial the range is increased to 75 miles on c.w. In actual practice we worked in a directed net on 2464 Kc. The other net used 6325 Kc. Besides the WSA510's control used 62 sets to keep in communication with mobile stations (field ambulance, the Major and Hdqrs."

A bit of news from L3042. Scores up to date, heard 270 countries, 40 zones all time. For 1960 heard 156 countries, 38 zones. QSLs from 257 countries, 40 zones all time. 1960, 107 confirmed, 34 zones. Mailed 1,187 reports so far in 1960. Has had 679 QSLs so far this year. He has made 233,179 log entries all time. And in 1960 has logged 12,627. He quotes the following: "QSLs Aug. 1960, rarest six were FG-7XF, ZL4JF, Campbell Is. W3ZA/EB, OX3DL, LX1DP, ZC5AE. In passing, I heard W2AYN/EP the first day he went on the air, and the first s.w.l. to log him. He's had 100 s.w.l. reports since the first day. UA9OU sent me a write-up on me in Russian, CXA Russian magazine."

### DX HEARD

On 3.5 Mc. L3039 heard SP9DJ; that's the only one logged on c.w. And L3042 confirms that 3.5 Mc. and 7 Mc. practically nil.

**14 Mc.:** L3039, c.w. in the a.m., UA4KHC, G3HWB, UA6UI, I1MIL, G3NMX. L3042: M1/W4BPD, VQ9HV (1310 GMT), YV5ANI, VR3L, JZ0PO, VS6EM, DU1AJ, UM8KAA, VK5BP/8, FK8AI, SV0WO Crete, ZK1BS, BV3HPT, VU-2RN, HL9KT. From L3074: Gs, I1s, DLs, CR-9AN, UB5LB, F8DO, VQ4GT, VP9DC, CN8CS, HC1FG. S.s.b.: K6CQV/KS6, ZS5CZ, KC4AAG, LX2MF, SM5LL, PZ1AX, UB5FJ, LU6AJ, 4X4IL, I1BAO, OA4CV, SV1AE, HC2VV and plenty of Gs. L3077 heard plenty on s.s.b., 54 countries all told, but won't name them here as time is on the wing.

**21 Mc.:** L3039, evenings up to 2130, Novices and Ws during the day. UA1BE, UA4IF, KL-7AMS, UG6AW, OH8KA, GW3KSQ, UA0GF, JA1BCQ, DL4NAC. All these presumably on c.w. L3074: I1s, Gs, ZSs, plenty of Russians, a new country for him, FR7ZD, YN1WW, HB-9VW, VS5GS, 9M2DQ, TG9US, CX1FM, CR-9AM is just a few he has heard.

**28 Mc.:** L3074 reports quite a lot of JAs and ZSs coupled with a couple of ZEs.

**QSL Ladder.**—As time is my enemy this month, I will delete the QSL Ladder as there are only minor changes. Hoping to hear from you all shortly. 73, the best of DX, Maurie.

# NOTES

## FEDERAL

### N.Z.A.R.T. CONVENTION

The 1961 Convention of the New Zealand Association of Amateur Transmitters (Incorporated) will be held in Hamilton (N.Z.) from Saturday, 3rd June, to Monday, 5th June, 1961, and any VK Amateurs travelling abroad in New Zealand during this period will be most welcome advises J. G. Sanders, ZL1AUV, Secretary of the Convention Committee.

Because there may be a shortage of accommodation in Hamilton during this week-end, Mr. Sanders advises any interested VKs to make an early booking. Details may be obtained from Mr. Sanders by writing to P.O. Box 636, Hamilton, N.Z.

### T.V.I.

Some interesting comments in relation to t.v.i. by Amateur transmitting stations have been received from VK2HS, Mr. E. M. Fanker, and may assist other Amateurs in tracking down interference.

Mr. Fanker says: "During my investigations into the problem of t.v.i. it has become obvious that very little trouble occurs from direct pick-up or break-through at the intermediate frequency of the t.v. receiver and that a high degree of suppression of harmonics radiated from the transmitter is necessary where these happen to fall in one of the television channels, e.g. the 3rd harmonic of the 21 Mc. band on Channel 2. The degree of trouble is of course directly related to the strength of the two signals.

"One form of interference that I do not recall reading of occurs when the t.v. receiver incorporated a considerable amount of negative feedback from the speaker voice coil to the first audio stage. Direct pick-up on the speaker leads occurs and is fed into the audio amplifier where it is rectified and reproduced by the speaker. This can easily be recognised by the fact that it is not affected by any setting of the receiver volume control.

"Another one that can be quite severe is caused by direct pick-up at the input to the video amplifier and should there be any long unshielded leads in this part of the circuit, severe interference from transmission in the 3.5 Mc. band may be expected. Use of the normal type of shielded hook-up wire in the video input circuit is not possible as the additional capacity seriously degrades the performance of the t.v. receiver."

T.v.i. is a problem which we shall all meet some time or another and is a challenge to the experience and ingenuity of the Amateur to find the causes and effect a cure. Information from Amateurs which might assist others will always be welcome for publication in this magazine.

### A.B.C.B. REPORTS ON I.T.U.

The Australian Broadcasting Control Board in its twelfth annual report to the year ended 30th June, 1960, made comment on some points arising from the Radio Administrative Conference of the International Telecommunications Union held in Geneva, 1959, which can have a direct bearing on the bands allocated to the Amateur Service. This is printed herewith for the interest of Amateurs.

"A Radio Administrative Conference of the International Telecommunications Union was held in Geneva between 17th August and 21st December, 1959, and the Board was represented on the Australian Delegation by Mr. W. H. Hatfield. One of the principal tasks dealt with by the Conference was the revision of the Radio Regulations and Additional Radio Regulations (Atlantic City, 1947), which include the Table of Frequency Allocations providing for the allocation on an international basis of bands of frequencies for the various radio services, including broadcasting, which covers both sound broadcasting and television. The tremendous growth in radio services in the intervening years, together with the requirements of entirely new services, such as Space Research, Radioastronomy and Ionospheric and Tropospheric Scatter Systems, provided extremely difficult problems in the allocation of spectrum space, particularly in those portions of the spectrum having long-distance propagation characteristics.

"As a result of the Conference, the following changes which affect broadcasting and television in Australia are contemplated:—

"**Medium-frequency 525-535 Kc.**—This band, which was previously allocated to the Mobile Service, is now shared by the Mobile and Broadcasting Services in Region 3, which includes Australia.

"**High-frequency 7,100-7,150 Kc.**—This band, which was previously shared between the Broadcasting and Amateur Services in both Regions 1 and 3, will now be allocated exclusively to broadcasting in both regions.

"**Very-high-frequency.**—The bands allocated to broadcasting in Region 3 in the Atlantic City table were confirmed with the following variations:

(a) 87-100 Mc. is now allocated to the Broadcasting, Fixed and Mobile Services, instead of exclusively to Broadcasting as previously.

(b) 170-216 Mc. is now allocated to the Broadcasting, Fixed and Mobile Services, in lieu of 170-200 Mc. in the Atlantic City table. (In Australia portion of the band 202-209 Mc. is allocated to the Aeronautical Radionavigation Service.)

"The frequency bands of the ten v.h.f. television channels reserved for television purposes in Australia are all included in the new Geneva Frequency Allocation Table and associated footnotes. However, the allocation of the band 136-137 Mc. for research purposes in Space and Earth Space projects, and a move towards eventual allocation of the band 132-136 Mc. to the Aeronautical Mobile (Route) service on a world-wide basis, may involve reconsideration of the use of Channel 4, 132-139 Mc., for television. Within television Channel 7, 181-188 Mc., the band 183.6 Mc. plus or minus 0.5 Mc. is allocated on a world-wide basis to Space and Earth Space services for research purposes, subject to no harmful interference being caused to other services.

"**Ultra-high-frequency.**—The band 500-820 Mc. has been allocated exclusively to the Broadcasting Service in Australia, except for the portion 585-610 Mc. which is shared by the Radionavigation Service on a secondary basis. The Radioastronomy Service may use the portion 606-614 Mc. until such time as it is required by the other services to which it is allocated.

"**Super-high-frequency.**—The Conference allocated the spectrum beyond 10,500 Mc., the upper limit of the spectrum allocated at Atlantic City (1947), up to a limit of 40,000 Mc. In this new spectrum space, broadcasting is allocated the band 11,700-12,700 Mc., shared with the Fixed and Mobile services.

"**High-frequency Broadcasting Plans.**—Nine draft high-frequency broadcasting plans, for different seasons and three periods of the 11-year sunspot cycle, were prepared by the International Frequency Registration Board (I.F.R.B.), for consideration by the Conference, with the object of substituting orderly planned use of the available channels for the rather chaotic conditions existing at present in the frequency bands allocated to high-frequency broadcasting. These draft plans did not find general acceptance and considerable time and effort were spent in examining various proposals, such as a further reduction in the technical standards upon which the plans were based and an increase in the width of the frequency bands available to broadcasting, in order to meet satisfactorily all the requirements submitted by countries. Neither of these major proposals was adopted, nor were the various countries willing to accept a reduction in their stated requirements, with the result that the Conference was unable to adopt the I.F.R.B. draft plans and instead concentrated on other means of achieving the more orderly use of the high-frequency broadcasting bands. The method finally adopted, which is a scheme of 'frequency management,' is based on the concept of 'current usage,' instead of the concept of 'requirements' forming the basis of the draft plans. In the operation of this new scheme, the I.F.R.B. will receive quarterly from each country the detail sof proposed usage for the coming period, and, by co-operation between administrations, it will produce schedules of operation by which harmful interference between transmissions will be reduced to a minimum. It is hoped that in the operation of this scheme over a period of some years a clear pattern of actual usage will emerge, allowing the production of acceptable plans on a realistic basis at some future time.

"**Technical Standards.**—In view of the increasing congestion throughout the spectrum and the consequent need to employ the most advanced techniques to reduce to a minimum the space occupied by emissions, and also any spurious emissions, the Conference adopted new standards for Frequency Tolerances and Spurious Emissions, and, wherever appropriate, these will be incorporated in the Board's Technical Standards.

"**Entry into Force of Regulations.**—The new Regulations, including the Table of Frequency Allocations, are intended to come into force on 1st May, 1961, with the exception of that section relating to the 'frequency management' of the high-frequency broadcasting bands, the first schedules of which became effective on 4th September, 1960. On 19th May, 1960, the Minister announced that the Government had decided that it would establish a special Committee to conduct a review of frequency allocations to all classes of approved users in Australia and to study the application of the Geneva Conference Table and its relevance to Australian conditions in the radio field."

"Better put it back together; here comes the Supervisor."

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## FEDERAL QSL BUREAU

Would all concerned please note that at 15th September, 1960, the licensed VK0 calls were as follows: AB, BH, CX, DM, ED, GB, GC, GH, IB, ID, IT, JC, JH, JM, KJ, NB, OF, PM, RL, SC and WH. (This information from the P.M.G. Radio Branch.)

Advice is still awaited re disposal of QSL cards for VK0CX, JC, JH, KJ, NB, RL. It would be appreciated if anyone keeping skeds with Antarctica could secure the required information and pass same on to undersigned.

G3WP advises that he finds the W.I.A. 1960-61 VK "Call Book" an excellent publication, and most useful, and wishes to thank VK5WS for sending a copy to him.

QSL cards from VK0RT have now been distributed according to Bill VK2EG. (Any further queries re this Antarctica station cards can be directed to Bill.)

Note, please, that the Nigeria QSL Bureau address is now: C/o. Dr. M. Dransfield, Reg. Research Station, Samaru/Zaria, Nigeria.

From 1st August, 1960, Korea nationals prefix changed from HL to HM. (HL9 prefix for American Forces remain as before.) QSL Bureau address unchanged at Box 162, Seoul, Korea.

—Eric Trebilcock (BERS195), Act. QSL Mgr.

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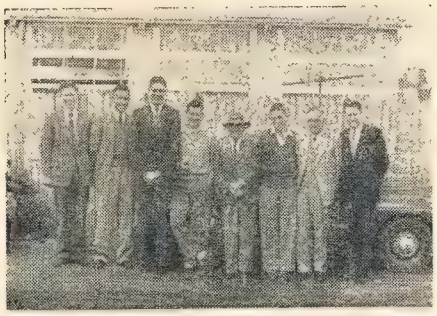
## NEW SOUTH WALES

An extremely interesting lecture was delivered by Mr. Peter Griffin, of the Department of Civil Aviation, at the September general meeting in Science House. The subject was "V.h.f. Omni Range (VOR)" and Peter explained the system to an interested audience. The vote of thanks was moved by Max 2MP.

Divisional activity since the time of writing the last notes has been highlighted by the Hunter Branch Dinner and Field Day, the South West Convention and the V.h.f. Spring Field Day. The Hunter Branch and v.h.f. activity are covered in other pages of the magazine, so only the South West Convention will be reported by this contributor.

The Eighth South West Convention was held over the holiday week-end of October 1 and 2 at Wagga. Senior Vice-President, Max 2MP,



Early birds at S.W. Convention (Saturday morning). Left to right: John 2ZDM, Ron Fullarton, Bruce 2FM, Bob 2EY, Harry 2AFT, Tim 2ZTM, Dave 2DE, Max 2MP.

and Councillors, Harold 2AAH and Tim 2ZTM, represented the Divisional Council.

The Convention opened on the Saturday morning at the Postal Institute with registration and ragchews, followed in the afternoon by a visit to the Post Office for an inspection of the telephone equipment. The evening activity commenced in the Guides' Hall with the Convention Dinner which was chaired by Jim 2AJO. Some sixty persons attended the dinner during which the Deputy Mayor of Wagga, Ald. White, officially opened the Convention. The toast to "The Wireless Institute of Australia" was proposed by Ross 2PN and the address was delivered by Max 2MP. At the conclusion of the Dinner, the party repaired to the Postal Institute to enjoy films.

Activity commenced on Sunday morning at 10 o'clock with a 2 mx Hidden Tx Hunt, which was won by Keith 2ZAA with Eddy 1VP second and John Weidon filling third place. Back to the Postal Institute by 11 o'clock, the assemblage listened to the Divisional broadcast, part of which was conducted by Harold 2AAH from the home of Stan 2AID.

After the broadcast came the disposals sale and then lunch. The early afternoon from 1.30 p.m. till 3 o'clock will be remembered by those who participated in the all-band scramble as the event of the day. Ross 2PN selected a good site near the reservoir, and although winner of the event with 19 contacts, experienced some interference from Harold 2AAH who was located some 200 feet away on the opposite side of the water tower! Neither operator was aware of this until after the event. Second and third places were filled by Bill 2AHV and Don 2RS, both with 14 contacts.

Back again to the Postal Institute and cars were loaded for the 2 mx fox hunt which was won by Keith 2ZAA with Ross 2PN second.

Final event of the Convention was the Blindfold Tx Hunt which was won by Mrs. Mills in the ladies' section, with Dave 2DE recording best time amongst the men.

After the blindfold tx hunt, prizes were presented by Max 2MP to the placegetters already mentioned and to others as follows: Lady travelling greatest distance to Convention, Mrs. Mann (XYL of 2ZGM), from Ungarie; gent travelling greatest distance to Convention, Assoc. Peter Barter, from Orange; the fox, Lindsay 2ZLS.

A minor convention was held at the home of Lindsay 2ZLS on the Sunday evening. Ragchewing and supper were the main events and it was not until well after midnight that the curtain fell on the Eighth South West Convention.

### MOBILE OPERATION

On Sunday, 9th October, some of the 7 Mc. mobile gang got together for a family picnic and day's mobile work. A meeting place was arranged at the Colo River where all members of the various families enjoyed themselves eating, swimming and rag-chewing (which includes brain-picking, hi).

With so much interest in this branch of the hobby, increasing efficiency of the rigs over the last several years is very evident.

Those present were VKs 2CE, 2KO, 2SW, 2WJ, 2PK, 2CK, 2VL, 2BK, 2VO, 2RX, 2ADA, 2AAT and 2ASV (all mobile); 2LS and 2APQ were also there, but not as yet radiating mobile r.f.

### HUNTER BRANCH

Alan Fairhall, VK2KB, at our September meeting, gave a very interesting colour slide talk of his journey to the East which included Bangkok, Singapore and Japan. Alan, with his inimitable flow of rhetorical description, kept the interest from start to stop. Even Bill 2XT, who had been that-a-way before, had that far-away look in his eyes and I would not be surprised to see him again travelling north, even if only to stay at a Japanese hotel.

Those noticed in the audience were VKs 2CS, 2XT, 2AYL, 2ANG, 2RU, 2ALA, 2ZDF, 2RJ, 2ALX, 2ZL, 2ZRR, 2QB, 2IJ, 2AAI, 2AQR, Messrs. Sutherland, Bailey, Stobbs, McLachlan, Ford, Corlis, Anderson; Mesdames Fitten, Adams, Collett, Bailey, Rose; Miss Fitten and Masters L. and T. Rose.

Les 2RJ was congratulated on passing into the ranks of the Benedicts, whilst our visitors from Gosford—Major and Mrs. Collis—were that day celebrating their thirtieth year of conjugal bliss. A glance at the roll-book confirmed a suspicion of mine that Zulu Lulu was only half there.

The social meet for the month at Billy Hall's place was well attended for a change and all enjoyed themselves except 2ZL as the only thing he could pot were the spots before his eyes. Earlier in the evening, Keith 2AKX had decided to form a gourmet club with himself, 2ZL and 2AQR as foundation members, but alas the argument between a Chinese omelette and Bill's stomach was a losing battle for the latter and the Club was disbanded forthwith. Congratulation to Ian Fyfe in passing the exam.—Z call not yet known.

**Convention Capers.**—Although the attendance was not as high as last year it was nevertheless as every bit enjoyable—the food was good, the company was good, and the speakers were excellent. After Major 2RU said Grace, the boys bucked in and did themselves proud, especially the 'gent on my left who had two plates of the doings and all the sausage rolls about the place. The toast to the visitors was proposed by Branch President, Lionel 2CS, which was responded to by Dave 2IJ. Wal 2SA, in proposing the toast to the P.M.G. and local Members, delved into his youthful days of communications, around about 600 B.C. In a more serious vein, Wal suggested that Amateur Radio could become a means of combating the problem of juvenile delinquency and that serious thought be given to encouraging the young squirts to join the ranks of hamdom.

Mention was made of the Radio Inspectors of his acquaintance, Bill Crawford, Tom Armstrong and now George Riley, and he said that nothing but praise had been heard about these gentlemen and their efforts to work in with the Amateur fraternity. Of Alan Fairhall, VK2KB, the Honourable Member for Patterson, Wal said, "We all know the stirling work he did in connection with the battle of the frequencies, even if you don't read Hansard." Responding on behalf of the P.M.G., George Riley said he had a lad an Amateur, and fully appreciated the troubles of the Amateur. George isued a warning that although there was an increase of 145 in the ranks during the year, there is a disturbing decrease in the number of active members, a state of affairs that should not continue if we wish to retain spectrum space.

The toast of Amateur Radio and the Wireless Institute of Australia was in the capable hands of Divisional Councillor, Dave 2EO, who said he was very sorry to see that there were quite a few local fellows absent this year. We all have to forfeit something to perform something worth while and no doubt quite a few present could think up a reasonable excuse to be absent but made that little extra effort and sacrifice to be present and put back into our hobby a little from which we gain so much. Divisional President, Bill Lewis, 2YB, responded and stated that he far from deplored the fact that VK2 Division often appeared to be complaining a lot as it showed that we are active and alive. Thanks were expressed for the stirling work of the late John Moyle and Alan Fairhall in connection with the I.T.U. The guest speaker, Max Hull 3ZS (Federal President), then mounted the rostrum with a back-drop of a schematic plan of the Administration of the Institute. Max gave an interesting and informative probe into Federal matters and as he spoke for 90 minutes I can only give a few pertinent points and pardon me if I appear to be rambling (blame the sausage rolls I had).

Sunday morning, S.W. Convention. Left to right: Max 2MP, Don 2KJ and harmonic, John 2ZHJ, Lindsay 2ZLS, Darcy 2ADM.

"The main man," said Max, "on your committee is the Federal Councillor, a point missed by quite a few and he must be of two parts thinking Federally not Divisionally. Quite a lot of time is wasted by individuals writing to F.E. on matters which should and must be presented by your Councillor. Amateur Radio does not do enough nor spend enough to foster the younger chaps. Boy Scouts for instance would be an excellent group, being interested in communication, to instil the spirit of the Amateur."

Continuing, Max said, that he couldn't understand the attitude of the P.M.G. Department in refusing to allow us to speak the language of the country in which we are in contact as the good book of the I.T.U. states that we must speak in plain language which does not necessarily mean English. When F.A.S.C. showed us in no uncertain manner what they thought of the Amateurs it was decided to approach the late John Moyle to represent us, but he refused, he wasn't even in the best of health then and pressure of work was with him, however with the help of Pierce Healy and others, John was prevailed upon to change his mind which he did when the seriousness of the situation was revealed.

A lot of criticism has been directed at F.E. in not releasing early report from John whilst at Geneva but they were sub judice and unable to be released. It was a remarkable fact that no mention was made at Geneva on the action of the jamming stations with their useless cluttering up of frequencies—apparently it was too hot to handle.

At long last we have a representative on the committee called Ad Hoc which really stands for Radio Frequency Allocation Committee and to date has had one meeting. Our main concern is to see that the bands are used to the fullest extent and it is hoped that when a request is made like the one concerning a copy of logs, it is replied to promptly, even though it may appear to be silly to you at the time. From time to time similar requests may be made at short notice, so back up F.E. in your own interests. Concern is also felt that due to the increase of Z calls, the lower frequencies are being neglected to a dangerous level so it behoves us to encourage the limited licensee to get his full ticket and so occupy more bands. Another frequency user knocking on the door is the television boys who, as the number of stations increase, so will the order for more frequencies increase. In conclusion, Max gave us a target to work for—every Amateur make an Amateur and so double the ranks.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★

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Stuart 2ZDF, our liaison officer, rose to thank all those who helped in the slow Morse transmissions and to pay tribute to our Honorary Secretary, Gordon Sutherland, on whose shoulders 99.9 per cent. of the work of this Convention fell. Finally, Lionel thanked all those for their presence and closed the function. As far as I can determine, the following were present: VKs 3ZS, 2IJ, 2ALJ, 2KQ, 2ANU, 2VU, 2AOR, 2AHT, 2QB, 2KB, 2YB, 2ABT, 2CW, 2VL, 2ZMO, 2ZJR, 2AEE, 2RJ, 2AYL, 2ZNW, 2AUH, 2GV, 2AHA, 2AGD, 2AKX, 2ZL, 2ZDF, 2AIM, 2MK, 2XT, 2RU, 2ALA, 2APQ, 2EO, 2CI, 2ADS, 2SF, 2SA, 2CS, 2AQR and Messrs. Hamilton, Bailey, Sutherland, McRae, Foster, Robertson, James, McLachlan, Russell, Simkus, Riley, Pollack.

Next day the Blackall's Field Day was enacted where for once it forgot to rain, but the wind was cold so Jack Hamilton was not kept as busy as he had hoped—however, you did a good job, thanks Jack. Unfortunately having visitor trouble, I have not all the results as I left before they were available. However, 2ZDF won both 144 hunts, runners-up being 2AHA and 2ANU in the first, with 2ANU and 2RJ in the second. Bill 2XT won a 7 meg. something or other. 2AIM's spouse naturally won the ladies' quiz. I know that because she rang me from Dora Creek to tell me, but who won the others I haven't a clue. However, for those interested the information will be in my next month's edition. There were several at Blackalls who were not at the dinner and these included two members of the Goon Show in the persons of Arthur 2ZP from Inverell and Bill 2ZO from Sydney—they were joined by Ivan 2AIM, 2ZL and 2AQR.

Next Branch meeting at University of N.S.W., Newcastle, will be held on 11th November at 8 p.m.

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## VICTORIA

This month the notes are being written by John 3AKS, who has taken over from Peter 3IZ as Divisional Sub-Editor. In future, please send zone notes, club notes, etc., direct to J. B. Battrick, Bayview Rd., Frankston; telephone is Frankston 33478, as John is also script writer for the weekly broadcast he would welcome all the news and views from VK3 Division, both for the broadcast and "A.R."

Well, as I was rung up and asked to take on this job on the deadline day for copy, this month will be only a token effort. However, in future we hope to keep up a regular "newsey" column. Please let me have your news and views either on the phone, on the air, or by letter. No news, no notes—so keep me informed, please.

### MONTHLY MEETING

This was attended by about 40 members and a visitor, Henney OZ7IH, from Copenhagen.

Kel Cocking, VK3ZFQ, gave us an excellent talk on cascode converters, high frequency crystal filters and receivers generally. He plans to publish the results of his findings re these aspects of communication soon, so we'll look forward with interest to reading about toroids, pole-zero spacings, shape factors, etc., all of which have been included in the project Kel has been associated with over the last few years. Many thanks for a very fine business lecture. Sorry for you blokes in the country who couldn't get along; and sympathy to the fellows in the city who could have come, but didn't.

### ANNUAL STATE CONVENTION

The Victorian Division's Annual State Convention will be held on Saturday and Sunday, 5th and 6th November at Maldon. An extensive programme for both days has been arranged. (See advertisement elsewhere.) Maldon is 84 miles from Melbourne, 11 miles from Castlemaine. Even if you can't make it for the two days, try to get there for the Sunday activities. Be seeing you?

### ANNUAL DINNER

All VK3 Amateurs, and Interstate visitors, are reminded that the Annual Dinner will be held on 25th November at Scott's Hotel and an early reply to your invitation will greatly assist the organising committee.

This promises to be a gala occasion—be in it! Hope you remembered to send back the slip off your ticket. Did you?

### COUNCIL BRIEFS

Miss Foster, our Admin. Secretary, has left, but a worthy replacement has been found.

The necessary formalities to reorganise our Division's finance have been taken by Council. The original mortgage on the building has been discharged and replaced by a loan from the Commonwealth Savings Bank.

That's about it for now, but I'll be chasing news, both for the broadcast and the notes—please keep me informed. I guarantee not to lose anything you send me nor omit it! I'll even keep copies of scripts to include in "A.R." How about that! It'll be nice to hear from you soon, zone correspondents.

### EASTERN ZONE

V.h.f. activities will be the main feature of these notes for the present as your correspondent has yet to build t.v.i. generators for the lower bands. As was reported previously, zone skeds are held on 2 mx every Thursday and Sunday evenings. The best effort to date was the 8 p.m. session on Sunday, 2nd Oct., when eight stations answered the roll-call. One point worthy of special note is that George 3ZCG, now at Koo-wee-rup North, was exchanging S8/9 signals with Peter 3ZDP and myself in Sale over a 90-mile path for several hours.

Other stations involved were 3DY in Maffra, 3ZAB in Traralgon, 3ZAQ in Warragul, 3ZBV in Morwell, and 3ZJM in East Newborough. Several of these stations have poor locations in the easterly direction and reflected path signals are used, particularly by Jim 3ZJM, for reliable contacts. 3ZJM is at the foot of the Haunted Hills and to work into Sale and Maffra he fires his 18 watts per medium of a 10 element yagi at Mt. Erica to the north east. Very steady signals off the mountains are received here normally running around S7.

This is a point worth considering by those Melbourne stations who consider Mount Dandenong too big an obstacle in the Gippsland direction—ever heard of obstacle gain?

Cliff 3AIT has been very quiet on 2 mx of late—probably chasing more contest honours or new countries on the h.f. bands. He reports that the electricity supply is soon to be connected so farewell to whining genemotors, flat batteries and filament switching.

3DY has become very active on v.h.f. and can be heard regularly looking for Melbourne stations on 2 mx. How about it you city folk, we want to keep him active on v.h.f. He will have 6 mx gear very soon. I hear rumours that Morwell High School Radio Club is springing into action—hope to hear you fellows on the bands soon. The club activities are not limited


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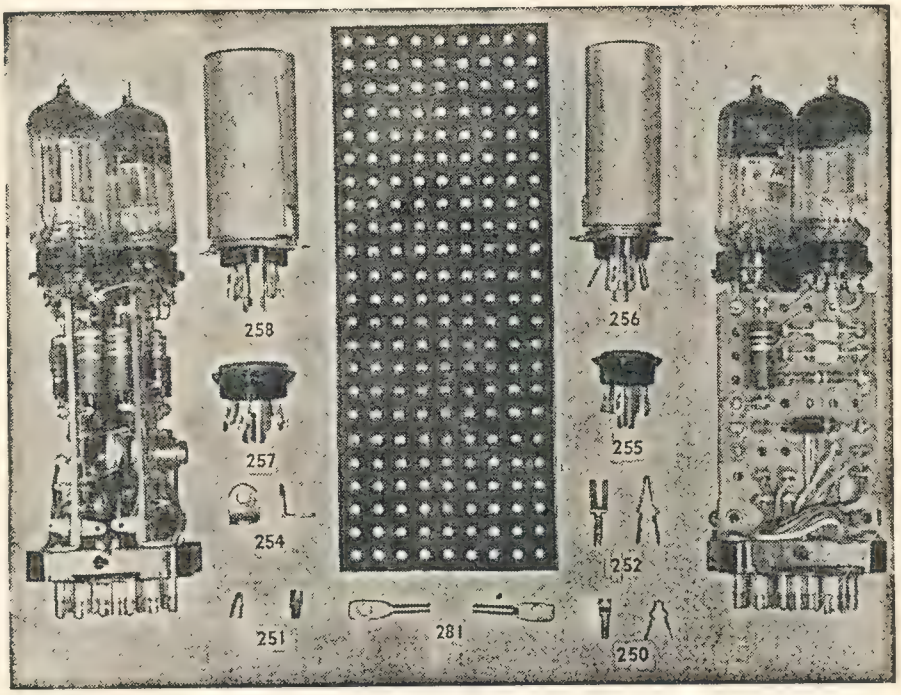


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to purely Amateur Radio and extend to quite a few fields associated with electronics. 3ZDP reports hearing Melbourne stations working across town on 6 mx, but unfortunately not looking for country contacts.

3PO has been worked by 3ZCG who now appears to have an ideal location for working into both Melbourne and Gippsland. Heard 3PO myself on 27th Sept. just above the very high noise level. The 2 mx gear is running here most evenings around 8 p.m. With the advent of warmer weather it is hoped to have as many as twelve stations in the 2 mx net and scrambles will be held on the third Sunday of each month from 1945K to 2000K. The Eastern Zone awakens, so let us stay awake! —3ASW (ex-3ZBR).

### WESTERN ZONE

Our Annual Zone Convention will be held in Rainbow this year. As yet, we have not selected a date as continued wet weather has compelled us to wait until the elements are more likely to favor us with a fine week-end.

Trev 3ATR (Warracknabeal) is at present in the happy position of having the S.E.C. power being connected to his property. Guess Trev will have his existing automatic a.c. supply connected so as to take over, should on those rare occasions the S.E.C. fail.

Keith 3QG (Murtoa) has completed his new rig and now only waiting on the erection of antenna so he will soon be in "business" again.

Zone hook-ups continue to be well patronised, so thanks a lot chaps for your continued interest.

### SOUTH WESTERN ZONE

This month we are deeply concerned to learn that Leigh 3II has been taken very ill. The Zone wishes you a speedy recovery Leigh, and we are hoping that it won't be long before your cheery voice is back again on 40 mx.

W.I.C.E.N. practices are progressing but attendances are small due to perhaps the lure of the DX bands. Several stations were active during the heavy rains and demonstrated the fact that when the emergency arises the Net will be ready. Signals on 80 mx during the midday sked were quite good and there should be no trouble covering the whole Zone area on this band at any time. Jim 3ABT has made tests on the 160 mx band using about 10 watts input and was read S8 and S9 here at Broadwater at night and daytime respectively. Receiving antenna was a 40 mx dipole. Noise level may be the problem on this band though. These tests brought to light an old friend whose signal has been conspicuous by its absence; that of Reg. 3APR. Reg's fire net, by the way, is one of those on 2,660 Kc. so he is no stranger to the lower frequencies.

An old friend blew into the Zone Net recently, one Bill 3AWZ. Bill had no trouble making his one watt sig heard all over the Zone, final being a 12A6. Bill is moving again and promises a new rig on the air then. Happy holiday to you Chris 3AXU. Wot, no gear! Shame!! 3HG and 3ADV both having water troubles, both underfoot and overhead. Neil has the s.s.b. going f.b. now and raking in the DX. Not so Brian, who is playing again with the electronic organ. Seems a big job that one. Do you need all those frequencies for tuning that s.s.b. rig you're planning?

40 mx has been playing tricks down Colac way for Chris 3AXU and Gordon 3AGV, who were unable to hear each other and they are only two miles apart. Always the unexpected happens and guess who? Harry 3XI on 80 mx with a TA12 tx. He has retreated with most of his gear to the farm away from the city noises. However, Harry has found that farmers have their troubles too! His nice long vee beam produced such a racket with the wind blowing across it that the old bull went beserk after a fruitless search for the new bull!

DX is showing up again on 80 mx now and then and one f.b. QSO was made with Phil W2HUG with sig. reports 589 both ways. Viv. 3ABX has now a v.f.o. and expects to be more active. Tony 3WB has been persuaded to put the key in that f.b. rig of his and has produced a very nice signal. Look out next R.D. Contest!

Organising the Jamboree-on-the-Air has kept John 3AGD busy. Eric 3ANQ is still with his beloved 2 mx, but things not very busy down there lately. Yet there are many with v.h.f. gear in the Zone. Mostly it seems up on the shelf.

**The Zone Convention date has now been set for 19th and 20th November at Geelong.** The Geelong Club are the hosts and should be a first class show as always.

Latest station to discard the carrier is that of Jack 3ALP. Jack came up with a watt or so which produced an s.b. signal, so what will happen when the final is added to the exciter? Rig is a phasing type to drive a ZL linear. John 3AMC was reported some time back to be about to discard his carrier for a d.s.b. set-up, but now it is rumoured that he is going even further and is about to eliminate both those frequency-wasting sidebands instead.

Just wondering what Casey was driving at last month. Must be us I guess, but was it brickbats or bouquets OM? It should be pointed out that the emergency nets used by the fire brigades in this State are owned and operated by the brigades themselves and not by the C.F.A. Lest there be any doubt about Amateur activity, almost every country dwelling Amateur is a member of his local network and invariably provide their own equipment which is licensed by the brigade for fire work only. Every Amateur within 100 miles of the recent big Grampians fire was in the fight using the emergency frequencies. Amateur equipment was also on the spot in case their frequencies could help.

The S.W. Zone W.I.C.E.N. has a backbone of these operators who, between them, represent every emergency frequency used in the Zone's territory. Not being subject to the same limitations as fire brigade operators, the W.I.C.E.N. is preparing to help with a bigger job over longer distances to provide any emergency communication needed whether by fire brigades, C.F.A. or anyone else.

In other fields, let us remember the whole business of radio for fire fighting was pioneered by Amateurs, much of the equipment, commercial and disposals, made or remade by Amateurs, and that Amateurs are still experimenting with new ideas for fire work. We have an Amateur on the Rural Fire Brigades Communications Advisory Committee, an Associate was recently President of the C.F.A., and three of the first handful of firemen to attend the Civil Defence are Amateurs and members of W.I.C.E.N. Thanks anyway, Casey, for the chance to publicise a little.

### GEELONG AMATEUR RADIO CLUB

The S.W. Zone, VK3 Division W.I.A., Convention is to be held in Geelong on 19th and 20th November, 1960. Members of the Geelong Amateur Radio Club will be at the club rooms in Gheringhap Street to welcome visitors on Saturday afternoon. Geelong Amateurs will be "on the air" on 3.5, 7 and 144 Mc. to contact mobiles as they converge on the city.

On Saturday evening, the Convention dinner will be followed by a general meeting of the zone.

On Sunday a meeting of W.I.C.E.N. operators is proposed, along with numerous competitions and events of interest to all. Those who wish to take an active part should come prepared for tx hunts on 3.5 and 144 Mc., all-band scrambles, etc.

Accommodation should be booked with J. R. Barber (VK3ABT), Carr's Road, Anakie, Vic. Please include 10/- deposit with bookings. Listen to VK3WI Sunday morning broadcast for more details.

— . . . —

## QUEENSLAND

### BRISBANE AND DISTRICT

Any of you who read the letter in the "Let's Buy An Argument" pages of "R., T.V. & H." from "The Voice of the Past," who transmitted programmes for four years on 14.98 Mc. down in Victoria before being caught, will be interested to know that you can't win if you try the same caper. You will probably remember that, in 1957, we were able to get twenty transceivers which the Police found were surplus to their requirements; well, recently I had a phone call from the Police asking that I should supply them with the names and addresses of the members who drew the transceivers. When I asked the reason for this request, I was told that some "dumkopf' had installed a transceiver of this type in his tow truck and had transmitted on the Police frequency. I was later told by one of our members that the transceiver used was not one of the ones we obtained, but the Police wanted the names "for the records".

It appears that this character was a regular "go-getter" in his tow truck business and had realised that he would get business by listening to Police transmissions and going to the scene of accidents immediately. Well, if he had let it go at that he would have been "apples," but temptation got the better of him and he just had to say his piece and confuse the gendarmes. For pete's sake, don't do anything like this because you will be caught for sure and you know what "penal clauses of the Wireless Telegraphy Act" means.

The Cotton Tree Social Sunday was a huge success and there was an official attendance of 63. This Field Day has decided the organisers to have more of the same type of functions in the near future. At the Cotton Tree, the ladies and harmonics had a wonderful time and they have suggested that there should be a country versus city XYL Rounders match at the next function. The OMs had a country versus city tug-o-war and the country team won, but wouldn't agree to a re-match. Did you hear about the Australian Record that was beaten at the Cotton Tree Field Day? Someone told Vince 4VJ that someone was calling to be "talked in" to the location. He got into his car and went to a great deal of trouble to explain where the Cotton Tree was. He asked, "Where are you now?" and received the reply, "We are exactly four inches away!" Sure enough, "Chip" 4XR was standing exactly four inches away from Vince's whip with a really tiny 7 Mc. transceiver built around transistors and torch cells. So they, Vince 4VJ and "Chip" 4XR, are claiming the "shortest-distance-ever" record QSO.

Stan, our Secretary, is still away as I write this and is now on his way down from the far north. He went as far as the Atherton Tableland and, from what he has told me per letter, he has had a wonderful time. Now, for the first time since going into "double harness," my XYL and I are going to spend a couple of weeks at Coolangatta with our harmonic. She has given me strict orders that I must take it easy while we are on holidays.

Our little 6 mx Communicators have been doing sterling service lately. Firstly, they were used during the large bush fire on Bribie Island in the capable hands of Ross 4ZAT. Then


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at

**MALDON**

PROGRAMME

**Saturday (from 150 hrs. on):**

Meeting place on arrival at Maldon, VK3FO's QTH at corner Spring and High Streets, on the left as you enter the town, quarter mile past the Shell petrol station, for direction to accommodation. 6.30 p.m.: Convention Dinner in the Shire Hall.

**Sunday (morning):**

9.30 a.m.: Leave Maldon for visit to Golden Age Gold Mine (congregate in the Shire Gardens). 10.30: 3WI Broadcast. 12 noon 144 Mc. Fox Hunt, starting point, Shire Gardens.

1300-1400 hrs.: Lunch, Shire Gardens. Afternoon activities at Butts Reserve, approx. two miles out of town. 1430: 3.5 Mc. Tx Hunt. 1535: All-Band Scramble. 1630: Afternoon Tea. Bring your own lunch and afternoon tea, hot water available.

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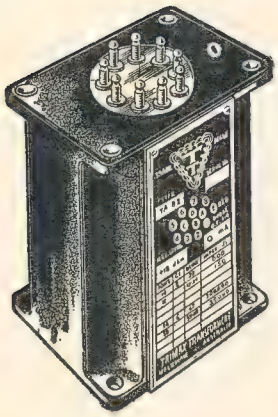

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the Southport Amateur Radio Club used three of them for display and parade marshaling purposes in the South Coast Spring Festival celebrations.

Well, cheers for now and I'll see you after my holiday on the Gold Coast. 73 from 4PR.

**TOWNSVILLE**

Spring now about to give way to summer; conditions on the band changing and with the disappearance of winter it is noticed the southern boys are again frequenting the bands, only the old die-hards being active during the hibernating months. All I spoke to had heaters warming up the shack. DX on the bands is appearing once again, only takes a contest to show how crowded the bands can really become, witness the last week-end of the VK-ZL Contest phone section, just like the last R.D. Contest, every spot on the bands open being fully occupied.

As shown in Sept. "A.R." our worthy State Secretary Stan visiting the Cinderella and wealthiest part of the State. Stan arrived just before I took off on another trip to the far north. Stan met almost every local Ham at their shacks and others at a special meeting held in his honor. Paid great credit to the local P.M.G. Dept. in their delivery of local mail. He posted a letter to one of the boys at 11 a.m. and before 5 p.m. the recipient was calling on Stan at the Caravan Park. As I was in Atherton the night of the meeting, took the opportunity to listen to various comments next day. Appears no one was dissatisfied with the W.I.A. and had only a few minor grumbles. He was certainly fed with Sugar Juice.

Met Stan in Cairns and attended a local get-together of the boys. Harry 4OH came in from Mossman, upshot was formation of W.I.A. club in Cairns. They seemed very eager to get going and will ultimately hold A.O.C.P. clases. Good to see such old timers like Arthur 4SM, Claude 4ZY come along and give of their experience and wealth of guidance to the younger chaps. Was also present when Stan visited 4SM's shack and boy, did they turn the wheel of radio back to 1911! Arthur still has some of the original gear on the shelf and guarantees it will still perform. While in the north, viisted every local Amateur except 4BP, travelling by caravan.

The visit to Alec 4MA, at Mt. Garnett, was very interesting and it was late getting shuteye after discussing the I.T.U. and frequency allocations. His hobby after teaching the R.R.R's. was the local ambulance committee and getting two-way radio for them in a very unsuitable location. Upon calling on Harry 4HK, found him flat to the boards, as usual, and complaining the days were not long enough. Slacken up OM, it's later than you think! Charlie 4GA is still batching and building a modern residence (what a chance for a YL Amateur). Out at the National Station 4AT, Neddy 4ZBJ was held up for a ragchew. Did she use the rolling pin because of later arrival home? Hopes to take the Morse test next examination. Don't forsake the v.h.f. band altogether.

As I had not seen Frank 4FC for over five years, he was called upon and again time ran out. Can I blame him for the tyre I blew just after leaving the township of Ingham?

Does anyone ever read the Australian Call Book because as far back as the first copy, it shows W.I.A. membership fees for every State, also in the notes of the various Divisions in "A.R." around Feb., March and April your attention is drawn to the fact fees are due.

Very sorry to see in August "A.R." that Don 2NO not being in best of health and wishing the Institute the best in the coming battle for frequencies.

Hope the executive in Brisbane can prevail upon our worthy Secretary to write a screed on his visit to the various Ham shacks during his holiday. (How about it.—Ed.)

Congratulations to Cliff 4QJ in Roma, forming a club and starting A.O.C.P. classes. Very sorry to report John 4DD in hospital again; hopes to be about very soon. Bob 4MF upholding our city honors on s.s.b. while you are off. Charlie 4BQ busy tuning his cubical quad. Next exam. will be tried for by the two remaining class members. Congratulations to John Sturgess, one of the members who sat last examination.

Heard Dale 4ZDG and Ross 4ZRV on 50 Mc. from Ayr, the others there busy building. Will Claude 4UX have some QRM soon? Bert 4LB made an appearance on this band recently, suffers lack of modulation. The only other locals heard were 4ZAK and 4ZDM. Japan coming through very well. Boys hope to work all Australasia the coming summer. Wishing each and everyone the best of everything in the coming festive season and may 1961 show further expansion in Amateur frequencies for citizens band and third party. 73, Bob 4RW.

## SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division, the Division which is most united, was held in the clubrooms to a capacity audience, all of whom received their money's worth from an interesting and informative lecture on New Guinea communications, delivered in his best style by Rob Gurr (VK9RO, ex-VK5GR), who is down on leave for a short period. Rob avoided technicalities in his talk, and covered an immense amount of ground covering the set up of all fields of communications. He brought along a number of excellent coloured slides dealing with the locality, all of which were well worth seeing in themselves, and judging by the large number of questions fired at him at the conclusion of his talk, his preparation for the night was well rewarded. The vote of thanks to the speaker was proposed in a manner worthy of the doyen of the s.s.b's., to wit, Comps 5EF, and the enthusiastic response on the part of the members should be remembered by Rob long after he resumes his duties back at VK9.

Nothing of extreme importance came up at the meeting, a letter from F.E. was read concerning the extracts from stations' logs being wanted, several matters of local interest came up for discussion, all of which have been mentioned over the W.I.A. Sunday morning session from 5WI, and Tubby 5NO, who has taken over my mantle for the moment, asked several interesting and pertinent questions of the Chairman, Lloyd 5OK, on matters of interest to members. This question asking is a good idea, it keeps both the membership and the Council on their toes and there should be more of it. A jolly good set-to between a member and Council, no matter how phoney, helps to liven things up.

There were quite a number of visitors present at the meeting, including a couple of OHs, presented to me as OH2KJ and OH3NS. We had quite a long talk to each other after the lecture, during smoko, at least I did the talking and they did the listening, but we all enjoyed ourselves immensely even if they did only nod or shake their heads. I was quite surprised that I did all the talking because I am normally a man of few words and very reserved at that, something resembling a shrinking violet, but I suppose there are times that even the worm will turn; what am I saying? Anyway, they both seem a couple of good blokes, and as they were enquiring as to joining the Division, they must be OK.

Those who have not yet seen the new clubrooms will be agreeably surprised at their cosy set-up with all mod. cons, and the Council are to be congratulated on their choice of a meeting place so close to the city proper. The meeting closed at the witching hour of 11.15 p.m. and those present left for their couch, or should it be couches of virtue, well satisfied with the night's entertainment.

Talking of shrinking violets and modesty, I note with some suspicion that the VK4 scribe, Bob 4RW, stuck his neck out last month with his reference to "Casey" Pansies, etc., etc., etc. I am treating the whole reference with ignore at the moment, but with a bit of luck it could turn out to be a battle to the death, said he, poking out his delicate little pink fleshy tongue in a gesture of defiance.

Talking of VK4, and who would want to do that, reminds me of the fact that every R.D. Contest I always manage to contact my counterpart, VK4PS, and without fail he says, "the name here is Alan, what's yours?" I always say "my name is Warwick, better known as Pansy." His voice carries more than a tinge of hauteur as he says, "I prefer Warwick, rather than the other one." Fie upon you Alan, can you be thinking the worst!

Ken 3AFJ and his XYL, Joan, recently sent me a book entitled Timothy's Book of Aircraft, apparently in an attempt to get sweet with me. I checked it for time bombs, virus germs, and any other form of retaliation, but it came through with flying colours. I am thoroughly enjoying it, although I am only up to the first page because of the big words like propellor, altitude, jet, etc., but my biggest problem is to fight off the attacks from my grandson Chris who emphatically insists that the book was sent to him. My XYL is of the same opinion and between the two of them I am having a torrid time, and I can only hope if Joan reads this she will come to my rescue and admit that they sent it to me. You did, didn't you, Joan?

Ben 5BP and Jeff 5NQ just returned at the moment of writing from their DX-pedition to the Northern Territory, and report an extra good time being had by all. Something like 900 contacts and 60 countries with the VK8 prefix. Understand the awards manager has gone into hard training in expectation of the number of certificates he will have to fill out to the DX stations in the near future.

Ian 5QX is still managing to knock off the odd new country on 21 Mc. telephony, and from the way he describes conditions on the band it would seem that 21 Mc. is coming good again. Here's hoping. Clive 5PE has joined the s.s.b. gang, complete with a new tower and a "dangling special" 3 element beam for 20 mx. Another of these new terms, first luke's "drooping doublet," and now a "dangling special." Could it be that they are having a shot at me?

Cyril 5DY pops up at various times with an f.b. signal and never seems to be stuck for contacts. Cyril, on my bended knees, in a posture of supplication, I beseech you, I exhort you, what about that article for the magazine. Puffing and panting I rise to my feet with difficulty, and with a look in my eyes, one green and one torquoise pink, that would melt a heart of stone, I say again, **what about that article for the magazine!**

Don 5TM appears to be so busy with E.F.S. activities that he appears very little on the bands. Of course this joker is a bit of a fox and could be on the air when we sleepy mortals never listen. Tubby 5NO is seriously thinking of putting up his tower again, as he is not going to move away from his QTH as previously reliably reported in these columns. I hasten to say this because so many rude people seem to think that the VK5 notes are more imagination than fact. How low can they get?

Ron 5FY is very busy with the many duties associated with the secretaryship of the now world-famed Elizabeth Radio Club (oh well, I have to slap it on a bit, if I don't, those wise men from over the border won't know that VK5 is that far out in front), anyway Ron has issued 20 Elizabethan award certificates to date and is expecting many more applications. He has an order with the printer for another 10000000 copies, well 100000, well 1000, well 10 anyway.

Keith 5EJ is now permanently based at Woomera, but manages to pay a visit home to Elizabeth now and again, although no details of any activity from him when he does come home. John 5EV is still commuting to and from Woomera, but finds time to use his rx to good effect, which incidentally my correspondent describes as a la 5XU style. This somewhat has me tricked, as on the many times that I have been in the shack of Gordon 5XU, I have needed a compass and a road map to get out again. Possibly I have missed the point. Harry 5EU is going strong with his 4 element version of the G4ZU. No details of the contacts made, but you know these modest Elizabethan Amateurs.

Joe 5JO heard in QSO with David 5DS. Aye, it's me, Dr. Mac., on 7 Mc., and taking a line from the conversation between them they are both in the pink, which is as it should be. Hughie 5BC, according to rumour, is down here from Berri on what I presume is annual leave, and according to rumour has been mobile on 6 mx fairly consistently. According to rumour he is temporarily based at West Beach, but so far I have not seen him at all, so, said he, shutting up his rumour box, it might only be a rumour. Wally 5DF has not been very active on the bands this month, although he always manages to bob up at the W.I.A. callback session on Sunday mornings. He has the family auto-mobobble down in pieces at the moment, preparing for the summer, and this will keep him fairly busy. Ever have any parts over, Wally? I always do.

Comps 5EF heard at the Sunday morning callback, and following the instructions of Gordon 5XU I turned this up, turned this down, adjusted this, and adjusted that, tossed up to see if he was using the top or the bottom, and all I succeeded in getting was the session from 7WI. I don't know, couldn't they devise some method of putting in a switch into this s.s.b. to enable the common herd like myself to at least hear one little teeny-weeny word!

Ken 5BS heard saying farewell to all on 7 Mc., and also saying how sorry he was to be going back to G-land. His call at home will be G3HRY and he is keen to contact us from there. Nice to have met you, OM; come again. Luke 5LL busy putting up a new pole and has abandoned his good and faithful Windom in favour of a "drooping doublet," his words, not mine. In my long sojourn on this earth I have heard of a lot of drooping objects, but this is the first time I have come in contact with a drooping doublet; elucidate Luke.

Ken 5KC heard on 7 Mc. the other Sunday morning in a highly technical discussion concerning Q5'ers, 14th edition of Handbooks, xtal grinding, and 6 mx s.s.b. I got off at the next stop when the s.s.b. came up, realising too late that he was in QSO with the Influence (5EF) at Gawler. Frank 5MZ is apparently

accident free once again, as I heard him call CQ on 7 Mc. in his usual breezy manner. Someone with a toffee apple in their mouth came back to him (no, not you, Comps, sit down) and I stuck around to see if Frank managed to decipher the call. Apparently his rx is allergic to toffee apple signals, like mine, because a deathly silence existed where Frank should have been. S.s.b. always reminds me of the B.O. slogan: "Even their best friends won't tell them."

Launce 5LD heard calling CQ on 7 Mc. also on Sunday morning. Long time no hear this one, but as I had heard him tuning up a day or so before, I was not so unprepared and had re-inserted the fuse in the aerial. Tom 5AQ was at the meeting from Leigh Creek and to prove that the pen, or the typewriter, is more powerful than the sword, he made me witness that he was paying back the two pennies he had scrounged from John 5KX. Jim 5JK not very active these days, but is heard testing his little pee-wee rig on 7 Mc. on occasional lunch hours. Only 9 watts but performs like 90 watts, as the reports from contacts show.

Talking of Jim reminds me that highly favourable reports on the strength, clarity and excellence of my signals on 7 Mc. continue to pour in from all parts of VK5. Normally this would be the cause of much rejoicing in my camp, but, and it is a big but, as I am on 21 Mc. only, I am beginning to suspect that either all the rx's of those reporting are up to putty, or I have an unwelcome visitor riding along on my carrier. Whilst I hesitate to believe that anything could be wrong with my signal, it is significant that I have been carrying out some tests with the aforementioned Jim (he only lives a block away from me and reports that my 7 Mc. signal is as strong as my 21 Mc.), and my face is getting redder and redder. My suggestion to Gordon 5XU, who is a member of the Advisory Council for VK5, that possibly I had made a world shaking discovery and would probably be knighted, met with such withering scorn that I fear I have shaken his faith in me. Not that he or anybody else had much over much faith in me, judging by their remarks over the recent years! This little paragraph should succeed in stopping all those misguided friends of mine who have been ringing me up with reports on my 7 Mc. signals, both good and bad, as the story gets around. I thank you all for your interest, but I am not interested in the Old Folks Home, or the Adelaide Gaol, nor even the Mental Hospital. Geeeerrrrcha!

Not much news from the Mount Gambier area this month, probably it is all the sunshine that they have had down there, or it could be the rearing of the ugly head of t.v.i., only to be expected with the strength of the t.v. signals being received there, anyway whatever it is, a period of Amateur inactivity has set in for the moment. Claude 5CH is still in the middle of that new tx building, but can be heard at times on his beloved 7 Mc. Ron 5VH has not been sighted this month, and from this, plus the fact that he has not been heard at all, seems to point out that he is as yet, not on the air. Be looking for you, R.

Stuart 5MS is a possible convert to s.s.b., and appears to be taking it seriously. He must be after the rare ones that indulge in that form of transmission. Comps' army is growing apiece, it could be me that is wrong. Tom 5TW is battling against a very high noise level at his QTH with the high tension line right at his front door, which makes the problem somewhat difficult. Have a chat to Les 5AX, he has had this trouble for as long as I remember, Tom. You can both weep on each other's shoulders. Erg 5KU is still working all that he wishes on c.w., mainly on 7 and 14 Mc. It seems to me that all he has to do is to press the key and the bands immediately come to life.

Leo 5GJ has been another who has been somewhat inactive, and rumour has it that he is not very satisfied with his rx. You and a couple of hundred others, Leo. Col 5CJ, apart from keeping skeds and writing to me, has also been on the quiet side. He tells me that he has heard nought from Arch 5XK, nor David 5AW this month, but he understands that they both are fighting fit. You can say that again Col., you should have been at the preliminary football final in Adelaide. Lucindale Loquacity at its best.

It appears that the Elizabeth boys have been playing around with the idea of some slow Morse practice on the air, and Tubby 5NO, in the course of conversation with Tom 5TL, openly admitted that he had never heard of Tom's session on Thursday nights. That makes me a failure and also Gordon, because when I am stuck for a paragraph in the local paper I always fall back on the Morse sessions available in VK5, and this holds good for the 5WI session from Gordon. Apparently with all the DX that they work from Elizabeth, they cannot see the wood for the trees!

The news from the Upper Murray almost reads like a mass exodus from that fair town, or is it a city? With the aforementioned rumour concerning Hughie 5BC being confirmed, Fred 5MA having been reported as far as Clare, Tom 5TL being absent when my daughter called in to pass on my 88s, er excuse me, my 73, and an almost entire lack of radio activity reported. Fred 5MA called in to see Lance 5XL at Clare, but found the bird flown on his way to Alice Springs for a holiday. Only left that morning, too, you can be unlucky, Fred.

Mr. Sobey, 5VO (I always try and keep sweet with the arm of the law, you never know, he might come in handy the next time that my grandson and I are sampling the oranges from the house next door), was recently sighted paying a social call to the Renmark Post Office to see Tom 5TL, and a professional call to the Police Station next door. I was hoping that the calls could have been in reverse, but no luck, Tom is still at large. You will get him yet, Alan. Tom 5TL has been attending a safety course in our city of culture (probably to teach him to keep his finger out of safe doors!). He tells me that my report on his accident last month was most touching, and he also lost his aerial which will necessitate some tree climbing, so an accident course or, as he says, a safety course seems to be just what the doctor would order. Oh, I say the sweetest things!

My secret agent, the one with the long handled cigarette holder, and the gold lined garter (what a life I lead, sipping bubbly and casting leering glances at the passing femininity) informs me that those two exponents of coloured films, Cec 5BZ and Doc 5MD, recently visited Loxton in search of exotic fruit blossom. They were unsuccessful at that town, but fortunately for the honour of Renmark, they found just what they were looking for and left well satisfied. Deaf aid indeed, was it necessary to carry me across the road after the football match? The traffic was not that bad. Also it was not neccessary to call out so loudly, "Hello, Grandpappy," I am not deaf. Anyway Cecil, I call you Cecil, because I am disappointed in you, why did you allow my name to be bandied around without even a word of remonstrance. I am mortified, I am cut to the quick, I will immediately mount my umbrage and ride away. Little oranges will grow again, I think!

— . . . —

## TASMANIA

Bob 7OM is back with us after his holiday in VK4. He celebrated his return to the air by burning out the thermo-couple in his antenna meter, putting him off the air almost as soon as he got on. Reg 7RL is in the Royal Hobart Hospital with a broken leg, as the result of a motor accident on his way back to Stanley from a trip to Hobart. We wish you well quickly, Reg. Max 7CA risked spending the last few days of his annual holidays in Hobart, and we would have liked to see him at more of the shacks. How about it next time, Max? Dennis 7DR also visited the big smoke during September and apparently he will be making a monthly visit to this end of the State for the foreseeable future. The same applies to you, Dennis, how about knocking some of us up? Russell 3SX/P was putting out a nice signal from up Mount Wellington on Sunday, 2nd Oct.

In these days of t.v.i. prevention, it is odd to hear of b.c.i. and not t.v.i. troubles, but that is exactly what has happened to Doug 7DW. Doug does not interfere with his own t.v. or b.c. rx but a nearby neighbour has complained about interference through one of the latest sets. At the same time, an older model in the same room is not subject to the interference. Best of luck getting rid of the trouble, Doug.

Our Secretary, Ken 7KA, has become a t.v. star, after his appearance on Channel 2 on the night of the R.D. Contest. The publicity on behalf of the Institute was excellent, Ken. There may be some truth in the rumour that Ken is considering changing his name to Cecil B. de Millin as a result of his success.

Jim 7JO has a new rig on the air, t.v.i. proofed, too. It is a table-top job, and is working out very well indeed. Lee 7KC should soon have his big rig again on the air. The space for accommodating it is about ready. Tom 7AL has at last received municipal approval for the design of his workshop-cum-shack. We can therefore expect to hear him on the air within the reasonable future.

At the Divisional meeting on 5th Oct., a clubroom fund raising committee was formed with myself as convener and Council representative, so now chaps how about some LSD to boost the fund, begun with £20 from the general funds of the Institute. The committee has a number of ideas for raising money which we hope to put into practice in the next few months. A pleasing feature is the way associate members have come forward to help on this committee.

At the same meeting, Alan 7MY demonstrated the circuitry of practical v.h.f. converters and produced some working models for our scrutiny. The vote of thanks by Joe 7BJ after the lecture put the matter beautifully when he drew our attention to the way in which crystal oscillators are now applied to these frequencies, whereas only a few years ago the application of crystal oscillators to even 7 megacycles was considered remarkable and the latest thing.


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**FOR SALE**: Eddystone 870 Receiver, as new, £20. 5AX all-band pre-amp. with p.s., £5. VK3OM, Phone 560-9215.

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**NOTE**: Readers are advised to note the change in Hamads charges commencing from December "A.R." See elsewhere in this issue.

**WANTED**: Author of "A Simple Means of Determining Modulation Transformer Ratios." Please advise your name so full credit can be given when your article is published.

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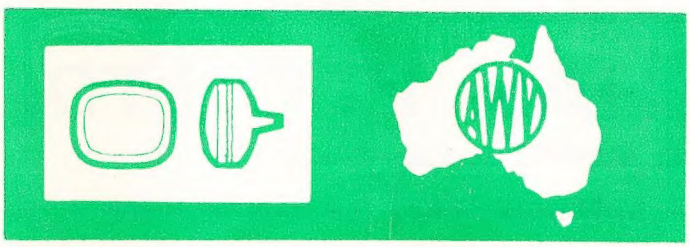
He told me that the set needed a new picture tube, so I told him about the trouble the old tube had caused to my eyes and of the headaches and eye strain brought on by the over-bright glare of the picture tube. He said the tube with the very best picture was, in his opinion, the one most easy on the eyes, and was just what I wanted. Naturally I agreed, so the man said, *"Replace it with a Super Radiotron Picture Tube."*

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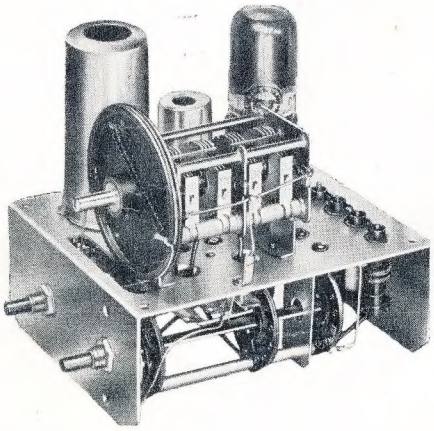

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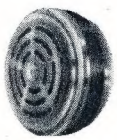

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